

Effective countermeasures against conventional war and terrorist threats. Protection against collateral civilian damage and contamination in conventional, chemical and nuclear attack, with nuclear deterrence against conventional warfare which, as science and history prove beyond doubt, costs more lives than nuclear deterrence. The media who profit from censoring out both effective civil defense knowledge and the effective, safe, escalation-deterred nuclear deterrence of conventional warfare (as the W79 did in Europe in the 1980s), deliberately promulgate terror for cash, catering to politically-correct hate-based pseudo-science bigoted fashions.

Thursday, December 18, 2014

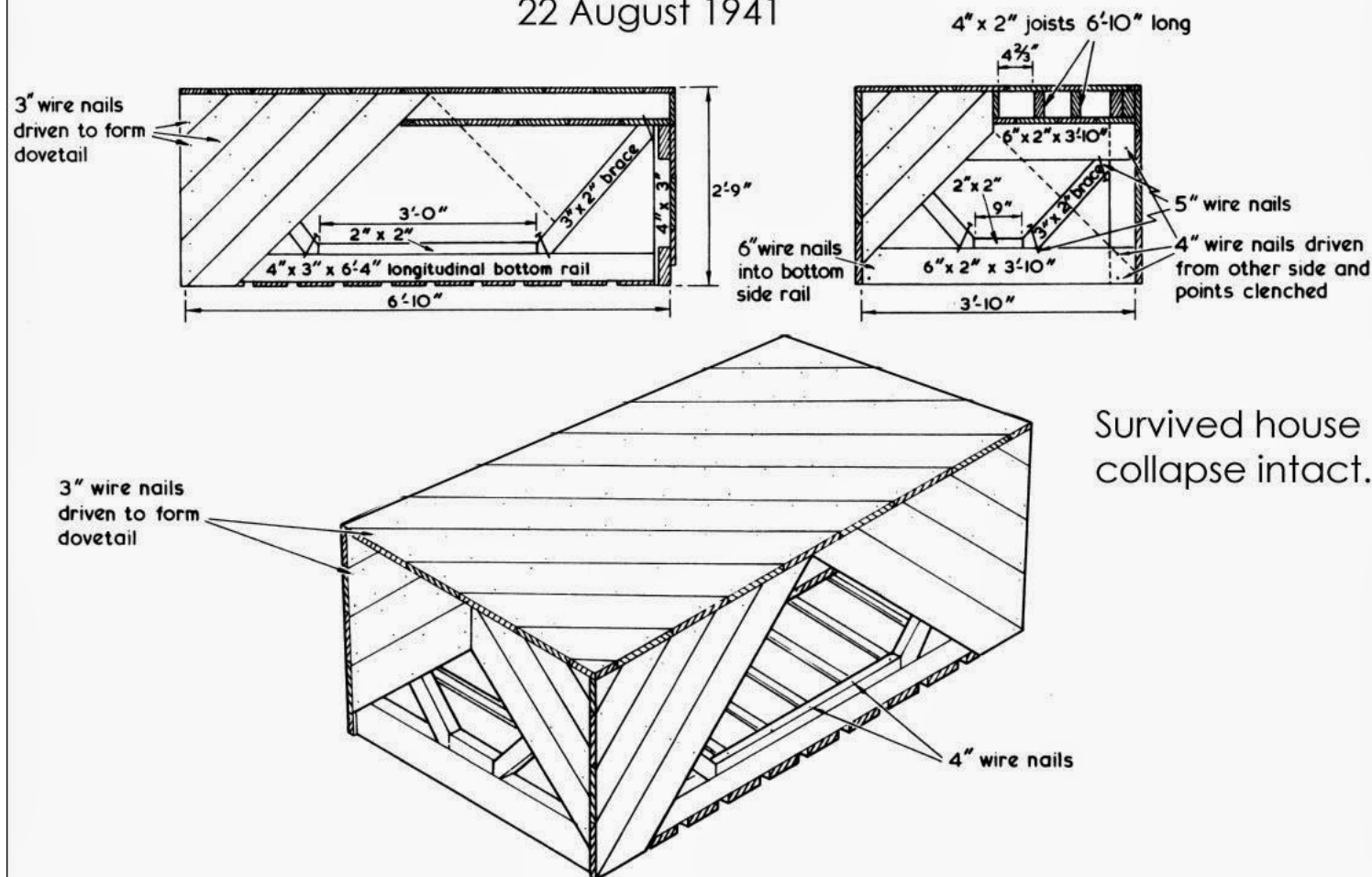
Proved 97.5% survival in completely demolished houses with cheap, simple indoor shelter

Lord Baker's remarkable book, *Enterprise Versus Bureaucracy: The Development of Structural Air Raid Precautions during the Second World War*, 1978, gives the survival statistics for simple indoor table type Morrison shelters on page 61: for Type A damage or complete demolishing by blast ("houses completely demolished") only 3 people out of 119 occupants were killed (hence the figure of 97.5% survival under strong tables). For type B and C damage ("houses damaged beyond repair" and "houses damaged so as to be uninhabitable") 0% were killed.

Lord Baker shows that a wooden version of the Morrison shelter was proof tested successfully with 1 inch thick planks and joists to resist a collapsing house, finished with a coat of fire proof paint:

PROOF-TESTED WOODEN VERSION OF MORRISON INDOOR TABLE SHELTER

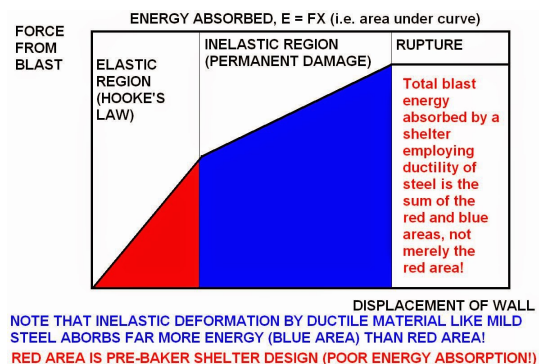
UK Home Office Research and Experiments Department Bulletin C21, 22 August 1941



Survived house collapse intact.

This wooden table shelter used "salvage timber from blitzed houses of which 20 shillings worth could be bought per month without a licence, ... the recommended material. ... The cost of materials including nails and fire retarding paint varied from £3 to £4.10s ... This shelter passed the Research and Experiments Department's tests with flying colours." - Lord Baker, *Enterprise versus Bureaucracy: The Development of Structural Air-Raid Precautions During the Second World War*, 1978, p80.

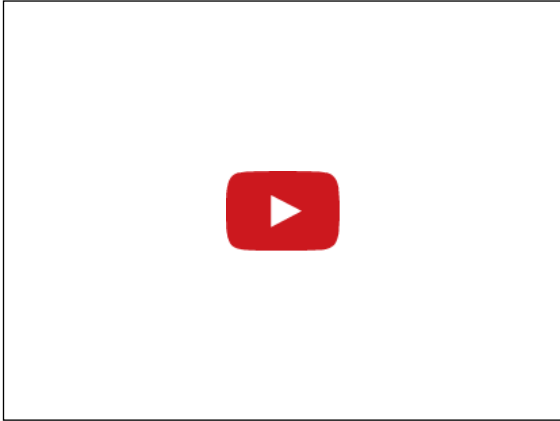
Before the second world war was started in the age of aerial threats, civil defence needed to get into gear. So in January 1939 British shelters were proof tested against bombs to ensure their credibility for the public, before their manufacture and distribution began in February 1939. It was only because of this practical civil defence before WWII broke out, that Britain was in a practical position to declare war against Germany when Poland was invaded jointly by Russia and Germany in September 1939. Hence, appeasement had to be the policy prior to credible proof-tested civil defence against the effects of aerial bombardment using high explosives. **We had the proof-tested technology in 1954 to build three storey concrete buildings to survive the 15 megaton *Bravo* nuclear test just outside the crater where the peak overpressure was 130 psi (photos in earlier post linked here), and anyway, rats without any fancy shelters survived on Engebi Island, just 2.5 miles from the 10.4 megaton Mike nuclear test (click here for the proof).**



"The energy absorbed by a structure in deforming it is measured by the area under the load-deflection curve [the graph showing load force plotted on the y-axis, versus the deflection in metres caused by the load, plotted on the x-axis, *see our illustration above*]. The ... energy that could be absorbed elastically [i.e. *without any permanent distortion*], is merely equal to area of the curve up to the elastic limit of Hooke's law] but the energy absorbed plastically [i.e. with *permanent distortion*] is the vastly bigger area [because it goes well beyond the elastic limit of Hooke's law]. When the energy to be absorbed is known, then the protective structure can be designed, using the plastic method, to have a collapse load and a permanent deflection of such magnitudes that the area under the load-deflection curve equals this energy."

- Lord Baker, *Enterprise versus Bureaucracy: The Development of Structural Air Raid Precautions During the Second World War*, 1978, page 28.

Page 117 of this book states that a total of 1,174,201 Morrison shelters were made and issued to the public (Patent Specification 548069, "Improvements in and relating to air raid shelters"). Note also that **Frank H. Pavry who visited Hiroshima and Nagasaki as part of the British mission to Japan in 1945, and later worked in the Home Office Scientific Advisory Branch on civil defence shelters** at the Monte Bello "Operation Hurricane" test with **George R. Stanbury** for nuclear war civil defence, was a member of Baker's RE4 team, the Design and Development Section of the Research and Experiments Department, Ministry of Home Security, in June 1941, as proved by the list of personnel Baker gives on page 99; on page 11 Baker states that Pavry and D. C. Burns - who improved the strutted refuge room design - were both engineers recruited by him from the Cement and Concrete Association. Baker's junior engineering partner at his consultancy, **Edward Leader-Williams (who collaborated on the Morrison shelter) was also recruited and stayed on at the Home Office Scientific Advisory Branch during the cold war, applying indoor sheltering to nuclear war and calculating the efficiency of civil defence against nuclear attack for government (e.g. his report CD/SA 54 on sheltering and evacuating British cities against an attack with five 20 megaton H-bombs**, which we discussed in a previous post linked [here](#)). The British Cement and Concrete Association is described by Baker as "the research and publicity arm of the cement industry" which offered the UK Government free-of-charge structural engineers to help with implementing practical shelter designs during WWII). See the video of Lord Baker proving that point about energy absorption, below:





Lord Baker (ScD, FRS, Professor of Engineering, Cambridge University 1943-68 and Head of the Design and Development Section of Research and Experiments Department, UK Ministry of Home Security, 1939-43), was the inventor of the indoor "**Morrison shelter**" (named after the Minister of Home Security Herbert Morrison, who was appointed on 4 October 1940 by Prime Minister Churchill when he fired Anderson because nearly all the **outdoor Anderson shelters** were useless due to ground water flooding). Morrison, upon appointment in October 1940, immediately commissioned the indoor shelter from Baker to replace the outdoor Anderson shelter in 1941, at least for the production of further shelters. Baker tells the story in his book *Enterprise versus Bureaucracy: The Development*

of *Structural Air Raid Precautions during the Second World War* (1978). The indoor shelter was opposed before the war when it was first suggested by engineers, because of politicians who exaggerated the "knockout blow theory". They claimed that ground water flooding and cold nightly air raids (e.g. every night in London for two months from 7 September 1940) was an absurdity and would never happen: the war would be won within 48 hours by a simple massive air raid combining poison gas, explosive and incendiaries to kill millions and induce surrender. This was propaganda for pacifist reasons, attacking cheap and effective protective countermeasures using exaggerations based on daft political assumptions, not scientific facts which played the role of camouflage for the false attack assumptions which ignored deterrence of escalation within a world war to gas attacks by the threat of both retaliation and simple defensive gas masks and liquid agent proof rooms (**similar firestorm effects are still exaggerated for nuclear attacks in modern concrete cities today by similar bigoted, dangerous, complacent disarmament propaganda for appeasement of terrorists**):

"Apparently, Mr Churchill, a few days before [in October 1940] concerned as he would be at the hardships of the common people and the possible danger to the war effort of any serious drop in their morale, had said to Mr Morrison [the new Minister of Home Security, who replaced the water-flooded Anderson!], 'Herbert, you must give the people a shelter in their own homes', ... The potential energy of a typical two-storey villa, or cottage type of modern house ... is equivalent to about 150 tons falling 10 feet. [Therefore, to make the shelter cheap and affordable you must permit the shelter to be dented, and use the plastic deformation to absorb the impact energy, instead of the old-fashioned engineering textbook approach of dogma, which "proved" shelters to be unaffordable by assuming that to give adequate protection the shelter must not be subjected to anything exceeding its yield stress force. Thus, you must design the structure deliberately to be dented in order for it to be able to absorb energy in the process, and therefore provide protection. A small shelter which was so strong it was not dented, would not absorb energy, transmitting large accelerations to the occupants and also proving to be immensely expensive and unaffordable. This is something that is never learned by the anti-civil defence brigade, who judge shelter success on whether there is damage to the shelter or not! You can't absorb large amounts of energy without distortion. As blast effects expert **Lord Penney proved in Hiroshima and Nagasaki, even the damage to wooden houses absorbed blast energy and shielded the blast in a cumulative manner; the oscillation of massive city skyscrapers by blast absorbs even more energy** and is ignored in barmy OTA blast calculations for cities that assume perfectly reflecting desert surfaces]... Since the shelter was to be 2 feet 6 inches high it was considered that the top horizontal members could deflect at their centres by 12 inches without injury to even the stoutest occupant, always assuming that he was lying down - if he was not when the bomb exploded he certainly would be by the time the house collapsed."

- Lord Baker, *Enterprise Versus Bureaucracy: The Development of Structural Air Raid Precautions during the Second World War*, 1978, pp. 48-49.

The extract below about J. D. Bernal's Communist-leaning "Cambridge Scientists Anti-War Group" (Hitler and Stalin were in collusion to invade Poland jointly in 1939) is available more fully online: Gary Werskey, "A MOST POPULAR FRONT", in the Christmas Supplement to *New Scientist* Dec 21-28, 1978.

threat of a major European war.

Naturally the public's greatest fear was that the enemy's bombers were about to "get through" and, having penetrated our defences, would lay waste cities bereft of an adequate system of civil defence. Such lack of confidence in the Home Office's Air Raid Precaution (ARP) programme was partly the responsibility of the Cambridge Scientists' Anti-War Group (CSAWG). In February of 1937 and again in April 1938, the CSAWG published some fairly hard and damaging evidence about the inadequacy of the official ARP strategy.

Though the mere mention of the Cambridge group's name could provoke, quoting *Hansard*, peals of "ministerial laughter" in the House of Commons, its experiments and criticisms did cause the government some concern in private. Indeed as late as October 1938, the First Lord of the Admiralty could concede to the Chancellor of the Exchequer that "We are dangerously backward in protection against the consequences of high explosives, especially in the vulnerable areas represented by important industrial cities with crowded populations". "It is clear," Sir Samuel Hoare continued, "that the country is anxious for large developments in the shelter policy, and the government must adopt measures which will secure vigorous and quick progress with all practicable schemes for providing such protection."

Measures were already being taken to strengthen the country's civil defences. The ARP budget rose to £42 million in 1938, an increase of nearly 500 per cent in the space of one year. Sir John Anderson, a distinguished civil servant, was appointed to oversee this rapidly expanding programme. One of his first acts as the ARP chief of staff was to ask J. D. Bernal, an X-ray crystallographer, who had been the moving force behind the Cambridge Scientists' Anti-War Group, to serve as his personal adviser on a wide range of civil defence.

The provisional acceptance of left-wing

The "Cambridge Scientists Anti-War Group" was founded in 1932 by the left-wing blinded physicist, J. D. Bernal.

The British Home Office (aka the wartime Ministry of Home Security) tried to ignore criticisms of proof tested civil defence, instead of engaging in democratic debate and debunking them.



scientists into the corridors (or at least the antechambers) of power must have astonished and discomfited the scientific establishment. For prior to 1938 the elders of science were lukewarm if not positively disdainful of the political activities of their radical protégés.

That in any event is the very strong impression one derives from a thorough reading of *Nature* in this period. Indeed, in the eyes of its editor, Sir Richard Gregory, and other contributors to that journal the scientific Left could do little right. The CSAWG's work was roundly and regularly condemned as "alarmist" and "politically motivated". The enthusiasm of left-wing researchers for socially responsible science in the Soviet Union was not shared by senior scientists, who were far more disposed to publicise the Soviet regime's "totalitarian" restric-

An experiment that backfired. In 1938 the Cambridge Scientists' Anti-War Group attempted to confirm a report from Spain that an incendiary bomb could set alight a multi-storey building by burning through several floors in succession. The experiment was entrusted to Maurice Wilkins, then an undergraduate protégé of J. D. Bernal and W. A. Wooster. Wilkins set up his apparatus in Wooster's garden. But as the photographs show, Wilkins's planks were more than a match for his "bomb".

Despite his failure here, Wilkins decided to continue his scientific career, which subsequently led to his Nobel Prize-winning collaboration with Francis Crick and James Watson on DNA.

Their criticisms of the ARP programme were being taken seriously. Their Association of Scientific Workers was gaining in strength, precisely because it tied together its campaigns for social responsibility in science with its demands for greater social rewards for scientists. Indeed it was apparent to some of the more enlightened and progressive members of the scientific elite that many of the radicals' short and even long-term aims were not all that different from their own. That much was clear from even a cursory analysis of the increasingly voluminous left-wing literature on science, including of course Lancelot Hogben's magisterial primer of 1938, *Science for the Citizen* (see p 6).

The common ground between Left and Right increased greatly in the spring and summer of 1938, thanks in no small

Gary Werskey's collective biography of British scientists and socialists of the 1930s, *The Visible College*, has just been published by Allen Lane.

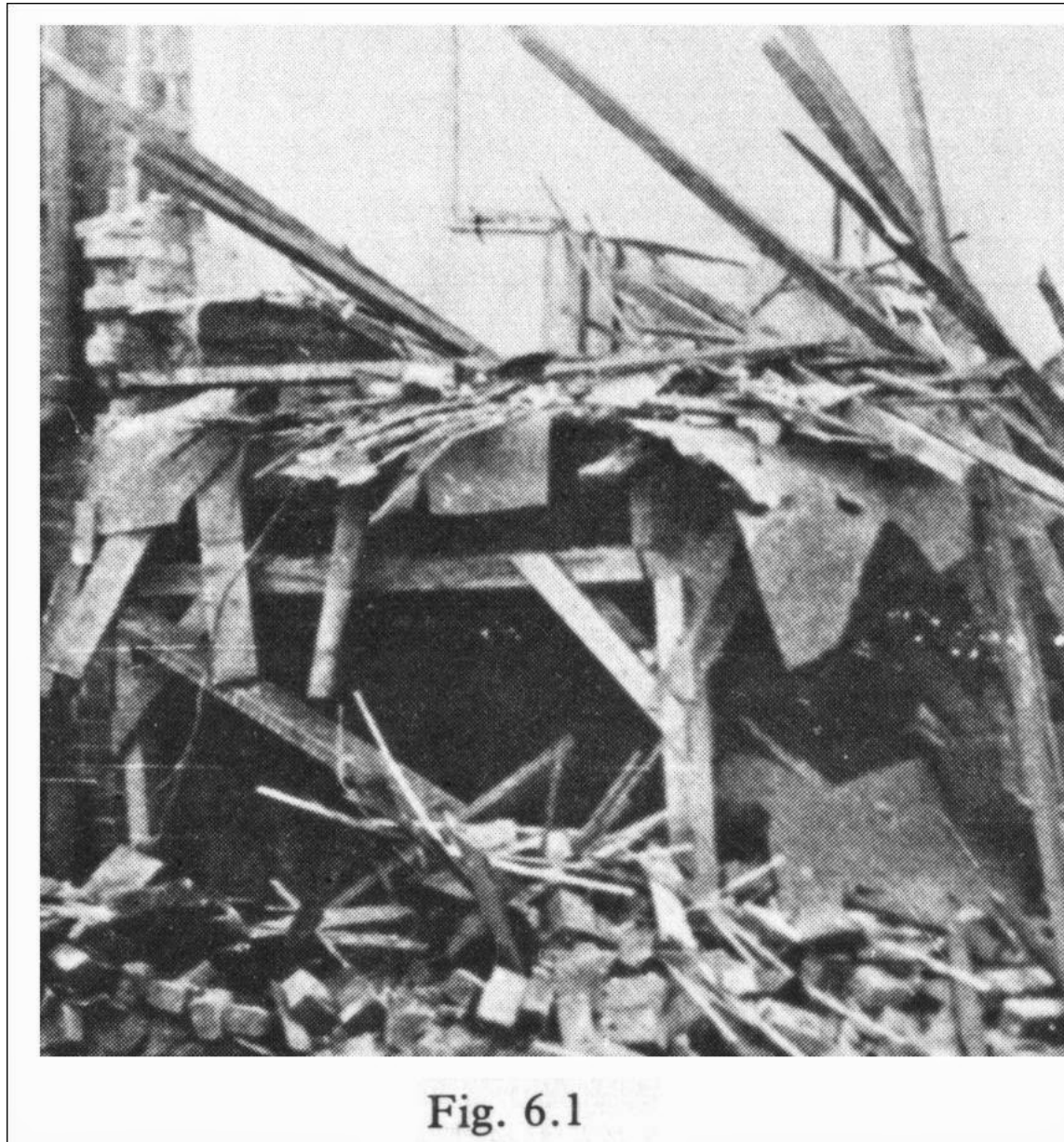


Click image for larger view

"A [house collapse resisting] shelter should be designed to absorb some part of the applied energy in its own partial collapse; complete resistance was far too costly ... The Morrison table shelter was ... designed to withstand the debris load of a house by its own partial collapse, whilst still giving adequate protection to the occupants." - George R. Stanbury, "Scientist in Civil Defence: Part 1", UK Home Office's Scientific Advisory Branch journal *Fission Fragments* (issue 17, June 1971).

The point is, your house is only going to collapse once, so the steel table (Morrison shelter) only needs to resist the kinetic energy of the falling debris of your house once, unlike public air raid shelters. Therefore, the brains of the table shelter is that you can allow a certain amount of denting to take place, and this allows the table to absorb the energy of the falling house without breaking the table. The same idea exists in car bumpers and "crumple zones" which absorb impact energy. **The fear-mongering in 1937 by the Cambridge Scientists Anti-War Group that fire bombing would drive people out of strengthened refuge rooms to be gassed outdoors, simply ignored the deterrence of escalation to gas bombing in WWII. They were groupthink, populist, pro-appeasement, biased dogmatists who allowed politics to blind themselves to the science of civil defence like today's political extremists and anti-civil defence fanatics, whose "authority" is taken always as fact by the self-deluded, lazy media.** Gas was never dropped because we could retaliate, so indoor shelters would have saved most of the Blitz victims:

New Scientist magazine, Christmas supplement entitled "Nostalgic Science", Dec 21-28, 1978, pp. 4-5.



Above: Lord Baker, *Enterprise Versus Bureaucracy: The Development of Structural Air Raid Precautions during the Second World War*, 1978, p43, Fig. 6.1. Note: this photo is government work from 1942 and is public domain. The photo shows the result of an air raid on 23 April 1942 at 11.30pm in Exeter, England: a German 0.5 ton (500 kg) bomb detonated 27 ft from this simple indoor wooden prop shelter, which saved 100% of the lives of those inside it. Both kids and the one woman inside all survived the complete collapse of the house above on this shelter (the house had 9 inch thick brick walls, timber floors and a slated roof, and had

been built in 1892). They were in bed, the bed being placed under the wooden support system. This cheap "strengthened room" idea had the advantage for long periods of sheltering (protracted air raid each night during a long blitz campaign designed to wear down morale) that, unlike **the outdoor Anderson shelter**, it was not freezing cold, and did not flood due to ground water seepage in the winter.

If people spend 8 hours a day asleep, they will automatically be in this kind of shelter 33% of the time. With the addition of this technology, or even simple bomb-proof-tested table shelters (see below) used as desks in work places, nearly 100% of the time people will be either protected from bombing, or able to quickly dive under a protective desk. This is of relevance for ongoing wars like the Syrian Civil War, where many lives can be saved by cheap, simple life-saving ideas employing scrap wood from already demolished buildings as proved by the diagrams below.

Most people surveyed in the Shelter Census in London during the 1940 winter Blitz were unable to use their Anderson shelters due to ground water flooding, but the very few (1,365) who had used the **1938 *The protection of your home against air raids* "inner refuge at home" advice (of a wooden prop strengthened bedroom) were able to sleep in the comfort of their own bed at home, with similar protection and without freezing groundwater flooding their shelters outdoors in winter!**

Sadly, as Lord Baker explains in his excellent book, *Enterprise Versus Bureaucracy: The Development of Structural Air Raid Precautions during the Second World War* (1978, page 42) **only 1,365 protected rooms** of this sort were ever built in England, whereas due mainly to communist propaganda (see below), **3,600,000 outdoor ground water flooding-labile Anderson shelters were built in England** (300,000 shelters affording protection for 1,500,000 had been by 20 April 1939 according to Sir John Anderson's statement in the House of Commons that day; the rest were issued up to June 1941, when the indoor Morrison shelter became the production replacement for the Anderson shelter). We have these records because the air raid wardens in every street in England had to quality-inspect and record shelters to enable rescue planning, etc. **If the indoor shelters had been built from the start, Blitz casualties would have been slashed, and people would have been able to discover and extinguish incendiary bombs in their homes more quickly and thus safely.**

The key problem for shelters in WWII was to make sure that people could actually use them in the situation of the attacks selected by the enemy, which were sometimes engineered to make it as *hard as possible for people to conveniently use outdoor shelters*. **Tunnel shelters beside ground zero in Nagasaki had places for 70,000 but despite a survival rate of 100% only 400 people survived in them because only 400 people were in them, proving that indoor shelters are better for surprise attacks where people have time to reach the shelter in the brief interval from an air raid warning (or the interval between the flash and bang blast wave arrival in a nuclear air raid, e.g. at Hiroshima and Nagasaki in August 1945). So those shelters were totally successful at resisting the explosions, but useless in practice because they weren't occupied.**

WHY ANTI-CIVIL DEFENCE PROPAGANDA DOES NOT GUARANTEE PEACE OR SAFETY, AND CAUSES ESCALATION OF WAR, WHEREAS CIVIL DEFENCE ALLOWS AVOIDANCE OF ESCALATION (THE OPPOSITE OF ANTI-CIVIL DEFENCE PROPAGANDA CLAIMS BY BIASED POLITICIANS)

War generally proves intractable by diplomacy precisely because it has been the failure of diplomacy which has led to the warfare in the first place. Diplomacy is thus the means which always caused, rather than prevented war, or as Clausewitz explained: "war is the extension of politics". This truth was proved time and again when diplomacy led to sanctions against Japan after it invaded China in 1937, thus causing the surprise attack on Pearl Harbor and WWII in the Pacific Theatre, and also when Britain's treaty with Belgium led to WWI, or its treaty with Poland led to WWII in the European Theatre. All wars tend to occur because diplomacy isn't working. So to try to use diplomacy to end war, when it is the failure of diplomacy which has caused the war in the first place, is like trying to put out a fire using a match. Sure, once the fire has burned itself out, the match can be dropped on the ashes and everyone can delude themselves that the match (diplomacy) has "put the fire out". (But it works faster if you drop a couple of big bombs before diplomacy.)

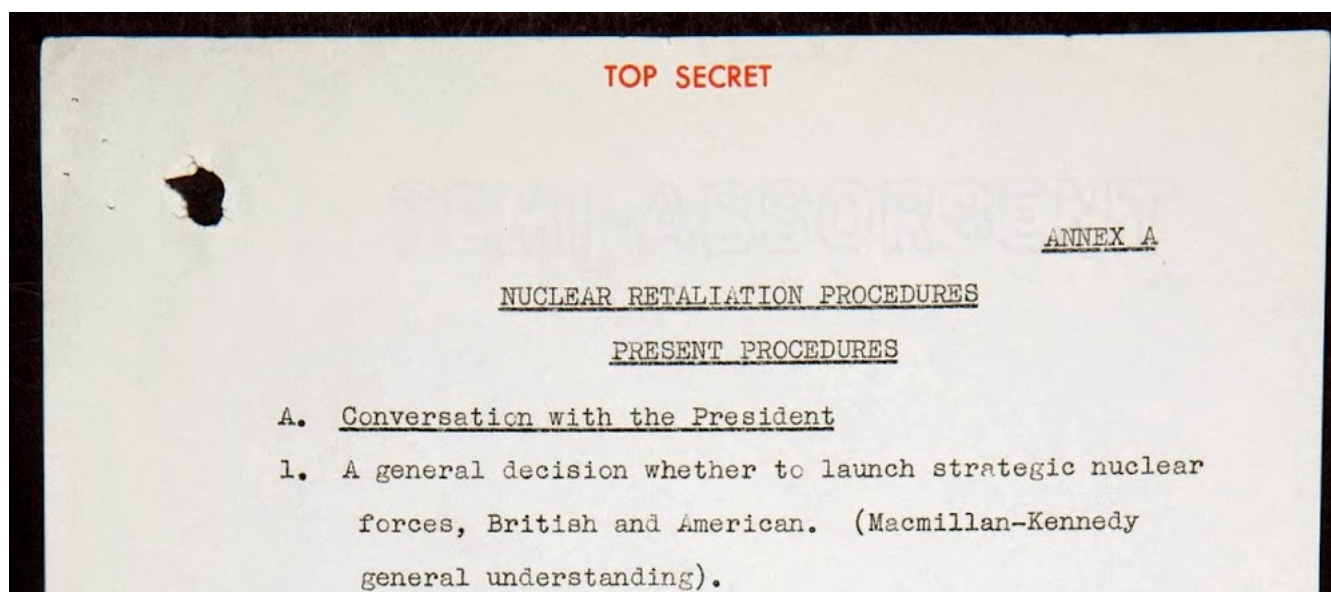
Why censor out the sure way to save lives in war, and **endlessly claim falsely that civil defence was a war-mongering disaster that never worked?** One of genius James Delingpole's friends, **Richard North, in a series of online articles called *The Shelter War***, has been duped by the "deep shelter" delusion into politically attacking and "discrediting" the better protection from dirt cheap improvised indoor shelters that would have offered effective protection at dirt cheap cost for millions of people had not his "working class heroes" (like rich don J. B. S. Haldane **on the left**) **endlessly attacked indoor shelters prior to WWII. Haldane,**

and North, have promoted the **totally deceptive and fully discredited, communism (politically)-biased theory** that "only expensive deep shelters offer any real protection". It was the exaggeration of incendiary fire risks from Haldane and the "Cambridge Scientists Anti-War Group" (a Marxist front endorsed in general by Haldane) that forced the Anderson shelter (originally intended as an indoor shelter to protect against house collapse, utilizing house damage to absorb the blast energy, as earth cover does in outdoor shelters) to be relocated from indoors to the cold, ground water flooded outdoors with a damp earth covering. In other words, *they ruined the Anderson shelter for winter use by most people*. The winter 1940 London Shelter Census showed that most people with Anderson shelters did not use them during air raids at night in cold weather when they were flooded, because pneumonia was a much more certain mortality risk than bombs. Shelters that are unusable are useless.

Contrary to all the communist propaganda that Richard North regurgitates uncritically and with reverence, deep shelters would have *lost England the war due to*

- (1) The cost,
- (2) the resources needed to make them (diverted from the war effort),
- (3) the ease with which the enemy could adapt its bombing campaign to take advantage of softer targets left defenseless while people moved into deep shelter,
- (4) surprise attacks to catch people before they could reach deep shelters (e.g. **at Nagasaki**),
- (5) invasion while people were hiding in their deep shelters (it's very easy to seal up shelter entrances, or to shoot people as they leave once you have invaded), and
- (6) the biggest single air raid disaster in World War II England was caused not by the Germans or by cheap shelters but by the use of the underground as deep shelter when 173 people (62 kids, 84 women) were killed in the crush to enter Bethnal Green Underground in London's East End during a rocket test in Victoria Park, 3 March 1943.

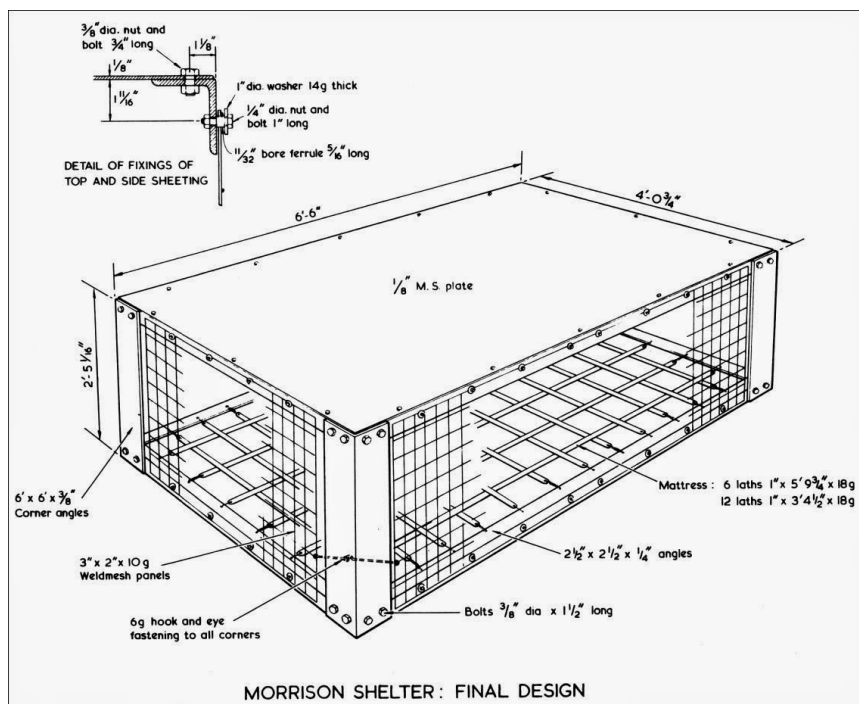
Thus, deep shelters, when presented as a solution to civilian casualties in war, can be **Maginot Lines**.



2. Operational use by United States forces of bases in the United Kingdom.
 - (a) S.A.C. airbases (Attlee-Truman agreement for "joint decision").
 - (b) Polaris submarine bases (Holy Loch).
(Holy Loch agreement, 1960 for "joint consultation").
3. Use of Bomber Command THORS. (1958 agreement - Command 366).
4. Clearance for launching of:
 - (a) United States tactical nuclear aircraft in United Kingdom assigned to SACEUR;
(Murphy-Dean agreement).
 - (b) United Kingdom tactical nuclear aircraft in United Kingdom assigned to SACEUR and carrying United States nuclear warheads.
(Murphy-Dean agreement).
5. Clearance for SACLANT to launch British nuclear striking forces in his command (not yet finalised).
6. Declaration of R-hour (i.e. the time at which nuclear weapons may be released) by SACEUR and SACLANT. May they declare it at discretion? If not, when?
- B. Conversation with SACEUR
 1. Declaration of R-hour (see A. 6 above)
 2. Launching of his tactical nuclear aircraft based in United Kingdom (see A. 4 above).

TOP SECRET

Above: formerly secret British-American nuclear "retaliation" procedures utilising military escalation through retaliation instead of life-saving civil defence (UK National Archives document DEFE 25/49, see also [reference DEFE 25/49 image linked here](#)). In 1937, cheap indoor civil defence recommended by the UK Government was falsely claimed by communist physicist J. D. Bernal's "Cambridge Scientists' Anti-War Group" (the precursor to modern lynch mobs like FAS, CND, SANA, Greenpeace, etc.) to be a con, using exaggerations of escalation to gas (including mustard liquid fallout type contamination, a protracted threat like radiation) in world war, by discounting the efficiency of civil defence and exaggerating blast and fire effects. The 1937 scale of "predicted knockout blow" in conventional bombing was equivalent to nuclear war. This is after a proper correction of bomb yield for damaged areas, using the correct scaling laws, which are not linear arithmetic but weaker than linear powers - in other words, **bigger bombs produce considerably smaller damage areas per ton of TNT than smaller ones, and they also take longer to destroy the damaged area because the blast arrival time and thermal flash duration over the wider area of destruction gives time for simple evasive action.**



Above: Morrison indoor shelter June 1941. 500,000 were distributed free in 1941, but by then the biggest raids of the war (1940) were long over. The lesson is that nearly 60,000 air raid lives were lost due to a blunder of bureaucratic "groupthink" in which the "scientific authority" (a contradiction of terms, unless science is allowed to revert to the bad old days of celebrity culture as in Aristotle's time) of a handful of celebrity physicists asserting falsehoods for political ends. As Lord Baker's book 1978 *Enterprise versus Bureaucracy* reveals, is to allow facts to achieve a fair hearing and not to allow bureaucratic dogmatic political lies to delay life-saving civil defence innovations.

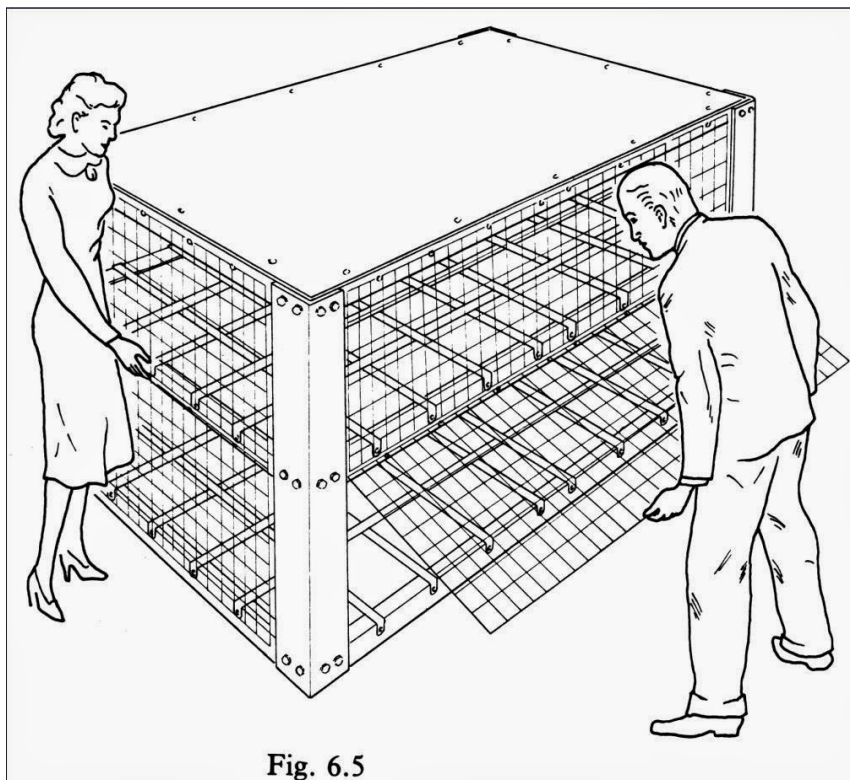


Fig. 6.5

Above: Two tier Morrison shelter made for large family bunk beds in 1941. The Morrison shelter inventor, Lord Baker, in his widely ignored 1978 book *Enterprise versus Bureaucracy*, Table 7.1 on page 61 proves that for 119 Morrison shelter occupants in Type A house destruction (complete demolition) only 3 died, a survival rate of 97.5%. Baker's Table 7.1 also shows that *nobody* died in any of the Morrison shelters in Type B or C damage zones (houses beyond repair and houses uninhabitable, respectively).

Without Morrison shelters and without any duck and cover, the mortality rate indoors was 61.9% in Type A damage (complete collapse of house) for 155 people within 70 feet of V2 supersonic missile explosions (1 ton TNT warhead), as proved by the 1946 U.K. Ministry of Home Security, Research and Experiments Department report S118, *A Comparison of the Standardized Casualty Rates for People in Unprotected Parts of Dwellings Exposed to Rocket Bombs (V1) and Flying Bombs (V2)*.

For duck and cover data using casualty data for V1 missiles (again 1 ton TNT equivalent), which were subsonic and emitted a distinctive loud throbbing sound (which my father still remembers from 1944), 23.5% were killed within a 70 ft radius (Type A damage, complete demolition of houses), as proved by Dr D. G. Christopherson's celebrated confidential-until-1975 classified Ministry of Home Security report RC450, *Structural Defence* (as rounded to 25% in the American 1957 *Capabilities of Atomic Weapons* and 1972 *Capabilities of Nuclear Weapons* EM-1).

So there you have the vital facts in a nutshell:

2.5% of people were killed in cheap indoor Morrison shelters in houses subjected to total collapse (Baker, 1978).

23.5% of people were killed while ducking and covering in houses subjected to total collapse (RC450, 1945).

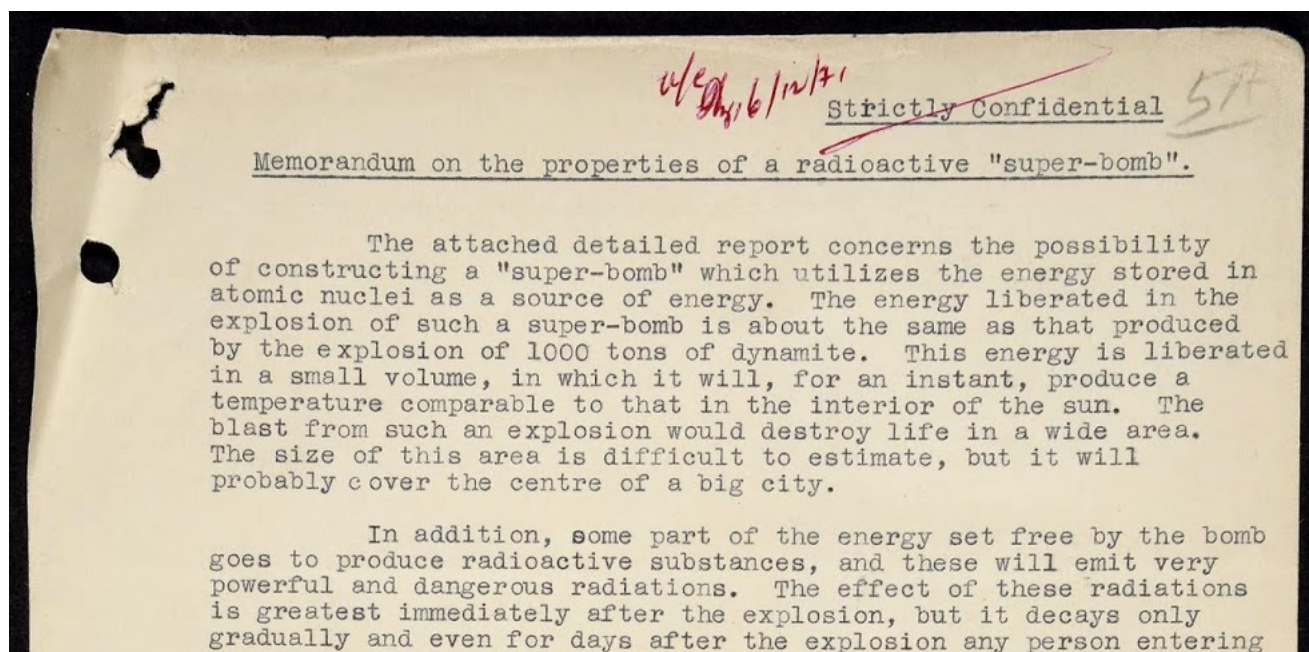
61.9% of people were killed when caught totally unprepared in houses subjected to total collapse (S118, 1946).

The V2 was more deadly for complete collapse than ordinary or nuclear bombing, because there was no time for duck and cover (due to the supersonic speed of the missile and the fact that WWII radar only worked for aircraft, not missiles reentering virtually from space). In conventional and nuclear attack, the approach of aircraft or the flash to bang delay time normally allow duck and cover, which is why all the politically-biased computer propaganda "predictions" of blast casualties for Hiroshima and Nagasaki (which ignore duck and cover entirely) exaggerate the observed casualty rates for people indoors (also for people wearing clothing outdoors, since the 1979 U.S. Congress Office of Technology Assessment fraudulent study, "The Effects of Nuclear War" assumes everybody outdoors in a high rise city are nude and in unobstructed Nevada desert, to exaggerate computer "predictions" of burns).

I placed this above comment also giving the facts about survival in cheap shelters, on Richard North's blog, but it was soon deleted with no explanation. I won't speculate about some of the nefarious, anti-debate, egotistic, paranoid delusions of supporters of child killing bigots, but let's just say that their alleged "professional research" is like a Marxist history based entirely on the rantings of Stalin, dressed up as academia, with copious footnotes and detail that is irrelevant and simply ignores all basic facts. They just delete any reference to the truth that blows their cover, or they try to shoot the messenger.

People are needlessly and painfully dying in wars because of obfuscation tactics and political bigotry. You'll never find any big shot journalist/historian/physicist, whether "right" or "left", telling these facts! They will slow-handclap the truth so it simply won't be heard, and laugh off facts, while making up lies about their proponents and then "closing down the argument" to ban any reply.

SCARE MONGERING ON NUCLEAR WEAPONS IN THE 1940 UK NATIONAL ARCHIVES REPORT AB 1/210, "MEMORANDUM ON THE PROPERTIES OF A RADIOACTIVE SUPERBOMB" BY (EXPLOSION EFFECTS AND CIVIL DEFENCE IGNORANT) BIRMINGHAM UNIVERSITY PHYSICISTS OTTO FRISCH AND RUDOLPH PEIERLS:



the affected area will be killed.

Some of this radioactivity will be carried along with the wind and will spread the contamination; several miles downwind this may kill people.

In order to produce such a bomb it is necessary to treat a few cwt. of uranium by a process which will separate from the uranium its light isotope (U_{235}) of which it contains about 0.7%. Methods for the separation of isotopes have recently been developed. They are slow and they have not until now been applied to uranium, whose chemical properties give rise to technical difficulties. But these difficulties are by no means insuperable. We have not sufficient experience with large-scale chemical plant to give a reliable estimate of the cost, but it is certainly not prohibitive.

It is a property of these super-bombs that there exists a "critical size" of about one pound. A quantity of the separated uranium isotope that exceeds the critical amount is explosive; ⁺⁺⁺. The bomb would therefore be manufactured in two (or more) parts, each being less than the critical size, and in transport all danger of a premature explosion would be avoided if these parts were kept at a distance of few inches from each other. The bomb would be provided with a mechanism that brings the two parts together when the bomb is intended to go off. Once the parts are joined to form a block which exceeds the critical amount, the effect of the penetrating radiation always present in the atmosphere will initiate the explosion within a second or so.

The mechanism which brings the parts of the bomb together must be arranged to work fairly rapidly because of the possibility of the bomb exploding when the critical conditions have just only been reached. In this case the explosion will be far less powerful. It is never possible to exclude this altogether, but one can easily ensure that only, say, one bomb out of 100 will fail in this way, and since in any case the explosion is strong enough to destroy the bomb itself, this point is not serious.

We do not feel competent to discuss the strategic value of such a bomb, but the following conclusions seem certain:

1. As a weapon, the super-bomb would be practically irresistible. There is no material or structure that could be expected to resist the force of the explosion. If one thinks of using the bomb for breaking through a line of fortifications, it should be kept in mind that the radioactive radiations will prevent anyone from approaching the affected territory for several days; they will equally prevent defenders from reoccupying the affected positions. The advantage would lie with the side which can determine most accurately just when it is safe to re-enter the area; this is likely to be the aggressor, who knows the location of the bomb in advance.

⁺⁺⁺ yet a quantity less than the critical amount is absolutely safe.

Notice the false claim that there is no **simple way to shield the fission product radiation**, and **no concept of clean nuclear weapons (proof tested just 16 years later at Bikini)**. Making up lies has always been the way to attract research funding, and if you mark your report "Strictly Confidential" (like they did), you're totally immune from public scrutiny and objective criticism by the millions of democrats in your country, who between them, might just threaten to expose your false assumptions!

Civil DEFENCE: Reliant to survive in blast - witness hases 11/1

Daily Express Wednesday November 19 2014 5

By Giles Sheldrick

Miracle escape

Dad and daughter, 4, survive blast that turned home into rubble

A FATHER and his young daughter had a "miraculous" escape when their home was obliterated in a suspected gas explosion yesterday.

Neighbours helped to dig Jay Sabanal and four-year-old Isabella out of the rubble after one spotted the girl's foot poking out of the debris of their two-storey home.

As Darren Terrell, 38, ran barefoot towards the pile of bricks and glass in Southampton, he heard Mr Sabanal desperately shouting for help to find his daughter.

Mr Terrell said: "My wife and I were in bed when we heard a huge bang and our whole house shook. At first I thought there must have been a car crash, but then I saw the house on the corner had exploded. There was not a window or door left."

A man was calling, saying, "Can you find my daughter?" It seemed she was buried somewhere and we couldn't see her. Then I saw a foot and managed to move the rubble off to get to the little girl, picked her up and pulled her out."

Terrell, a docker, then called for help in moving Mr Sabanal, 36, who was stuck under the mangled wreckage.

Both father and daughter had been asleep when the blast ripped through the property early yesterday. Incredibly both suffered only minor injuries.

Mr Sabanal's wife Liberty, a nurse at Southampton General Hospital, was working a night shift in the intensive care unit when she discovered her husband and daughter were being treated in the A&E department.

Last night Mrs Sabanal, 36, originally from the Philippines, said: "My world collapsed as well when I found out. I couldn't believe what they were telling me. It's a miracle they survived at all and I was so relieved when Jay had a scan and it was all clear."

He's got no fractures and although he's in shock, somehow he's only got a couple of cuts and bruises. Isabella has been very lucky too, escaping with two cuts and grazes.

"We are all still in shock after the explosion and it's going to take a long

Example of people surviving with minor injuries in blasted home. Blast energy was absorbed in wrecking home, saving nearby house.

PHOTO CREDIT: STAMP RELEASE ©



Richard North's "miracle" of survival in blast demolished house without a deep shelter. Every shelter survival fact that disagrees with biased dogmatic politics is called a "miracle" or an exception, a fluke. It is then censored out as "propaganda" while his own lies are asserted as uncontested.



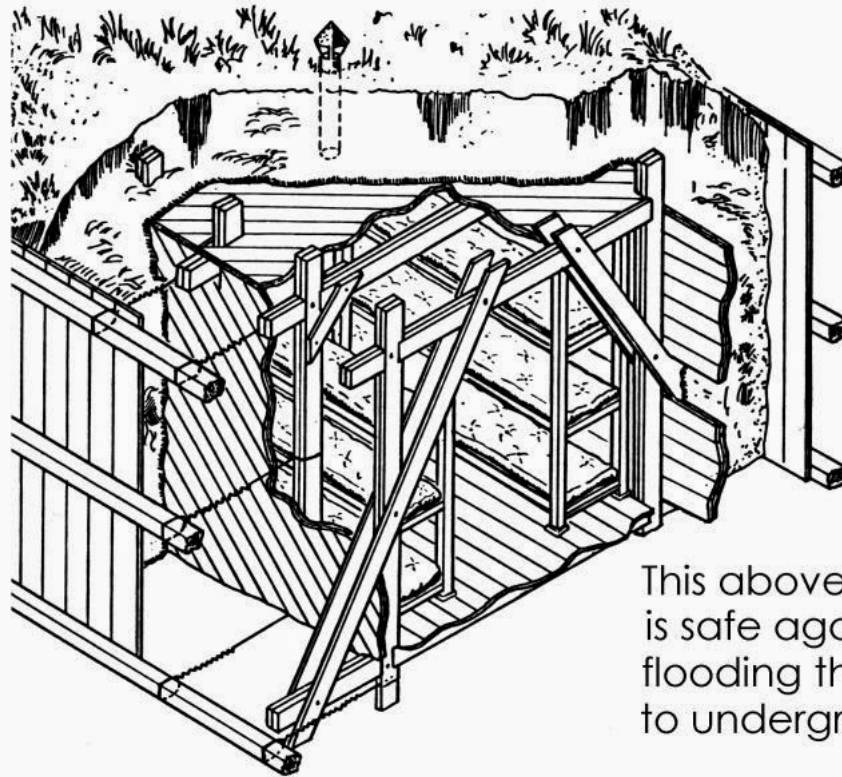
Fig. 7.5

Above: air raid result of 250 kt bomb exploding at 1.45 am on 4 May 1942, in Exeter, producing 34 ft diameter crater, 12 ft deep, with the crater actually engulfing a house containing a Morrison table shelter. The blast ejected the Morrison shelter with its 3 occupants (2 kids, 1 adult) a distance of 46 feet over a nearby concrete communal surface shelter (which survived, middle of photo) and on to the first floor of another house, as shown by the red arrow. Lord Baker explains the 67% survival rate in that Morrison shelter (shelter 180, case 55) on page 68 of *Enterprise versus Bureaucracy*: "One child was only slightly injured, but the other child and the adult were taken to hospital where the child subsequently died. The shelter [in the house next door] in **No. 176, Case 56, was treated slightly less violently.**

It was blown 6 feet away and landed 5 feet up on the debris of the house. It was undamaged and the four occupants, unhurt, escaped unaided."

(Emphasis added.)

PROOF-TESTED OUTDOOR ABOVE GROUND WOOD AND EARTH SHELTER

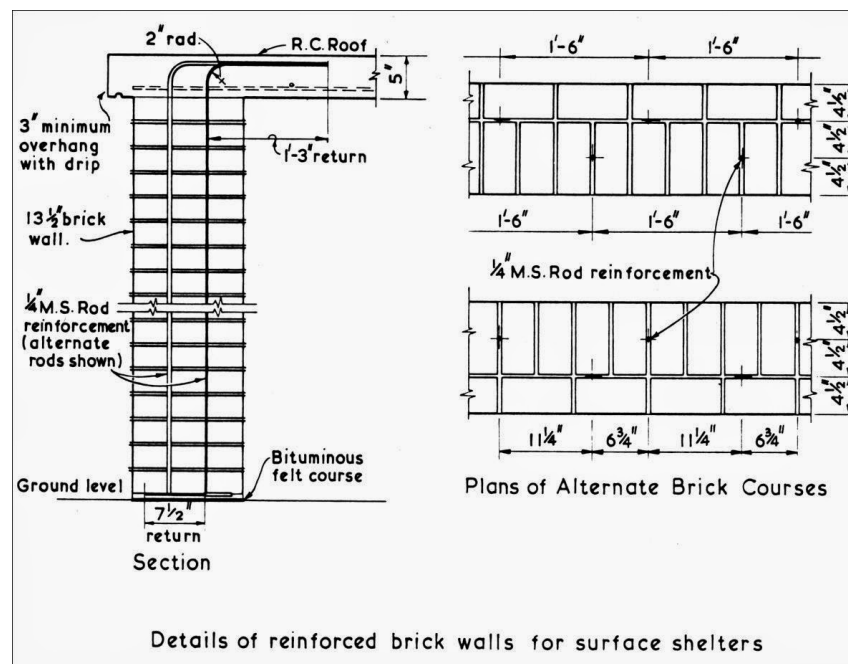


No casualties
in test at 20 ft
(250 kg TNT)
(Minor damage
to shelter from
the crater debris)

This above ground shelter
is safe against ground water
flooding that occurs in winter
to underground shelter/trench.

UK Home Office Research and Experiments Department Bulletin C26,
*Timber shelters for countries where timber is plentiful and steel difficult
to obtain*, April 1942. This is a surface (not underground) wooden shelter
with 2.5 ft earth fills in the gap between two wooden walls, and on roof.

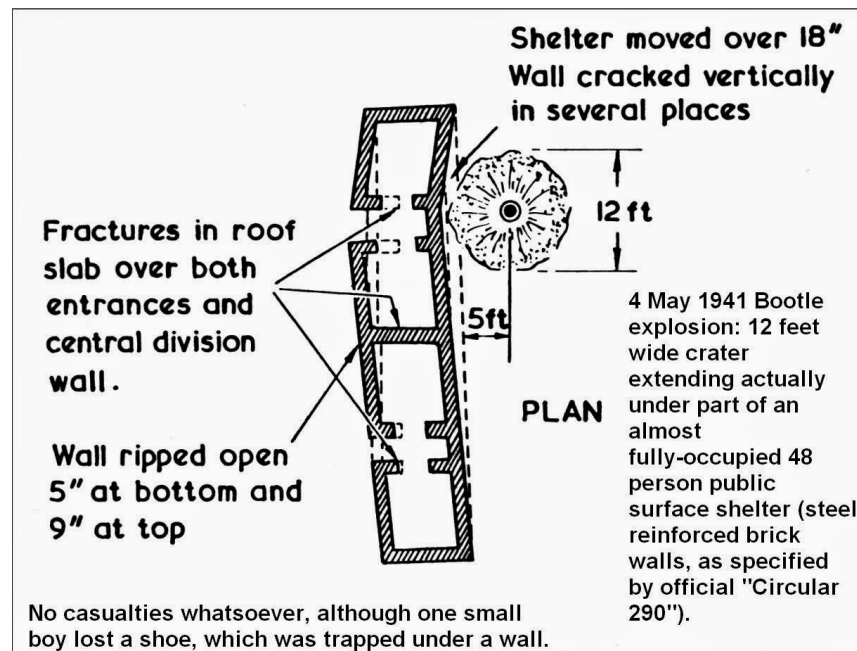
Above: Proof tested outdoor warm and dry unfloodable wooden WWII English shelter. Source: U.K. Ministry of Home Security, Research and Experiments Department Bulletin C26, April 1942, *Timber shelters for countries where timber is plentiful and steel difficult to obtain*. Why the devil is all this proof-tested data excluded from present day civil defence discussion, you may well ask. Secrecy and politically bigoted censorship is the depressing reply. **Nobody, at least in the big-money making professions of mainstream history, mainstream science, mainstream technology, or mainstream politics, and wants to even admit the existence of any facts that give a cheap technological fix to a problem that people, for millions of years, have sought to solve by diplomacy, even when it is a hard proved fact that diplomacy is precisely what causes wars in the first place: "war is the extension of politics."**



Above: in 1940 another error by Sir John Anderson with regard to shelters cost many lives when obfuscation on shelter construction led to the use of *lime* mortar (which is relatively weak, like normal house walls) instead of *cement* mortar in the building of surface brick shelters (in areas where the ground water all year round prevented underground Anderson shelters). The lime mortar shelters proved useless unless they were modified as suggested by Baker, with steel rods inserted into walls to provide ductility, as shown above by Lord Baker in *Enterprise versus Bureaucracy*, taken from the out of copyright report *Circular 290 Reinforced Brick Shelter*. Baker explains on page 37 that the resulting strength of the steel beam reinforced brick walls made them excellent blast shelters, as proved by a cine film of a shelter with its remote end 37 feet from a 250 kg explosion, where the ground shock acceleration was 20g:

"This shelter, known officially as *Brick Surface Shelter reinforced in accordance with Circular 290* was an immediate and immense success in exactly the form in which it left the design engineer's drawing board. It went straight from the drawing board to the municipal engineers to be built in thousands on our city streets long before the tests had been carried out, such was the urgency as mentioned in my Minute of 26 October [1940] to Stradling. ...

"The first recorded incident involving a Circular 290 Reinforced Brick Shelter occurred on the night of 9th April, 1941, at South Shields. A very large 1000 kg bomb fell 38 feet from the end of the shelter which had six occupants. The crater formed was 55 feet in diameter and 13 feet deep in clay ... no occupant received any injury. Ten days later a similarly constructed public surface shelter was subjected to an even more severe test in London at West Ham ... there were no casualties. ... on the night of 4th May, 1941, in Bootle ... a 48 person public surface shelter [illustrated below] ... was occupied almost to full capacity ... the crater broke right under the shelter ... no occupant was injured, but one was inconvenienced. He was a small boy who was highly indignant because the wall of the shelter had not only moved laterally, it had lifted and in coming down again had trapped the welt of his boot, so that he had to make his escape from the damaged shelter barefoot. ... What was remarkable, of course, was the resistance of the human frame to the enormous accelerations to which the shelterers were subjected."



These steel-reinforced brick surface shelters were tested in controlled experiments using a 250 kg bomb at 15 feet distance in Richmond Park, London, on 19 June 1941, *after they had already been proved in actual air raids, occupied by Joe Public!* Such is the slowness of bureaucracy for Health and Safety, versus the practical demands of real war. (See Baker's 1978 book, at pages 39-40 for details of the Richmond Park test.) In addition, blast walls of brickwork, with ductility due to steel rods that ensured they did not fragment into a hazard when hit by an overpressure beyond their design limit, were proof tested by Baker's team and then used to protect factories workers by absorbing energy and diffracting blast waves upward and away from people and machinery:

Ministry of Home Security, *Protective Walls in Single storey Factories*, Bulletin B10, September 1941:

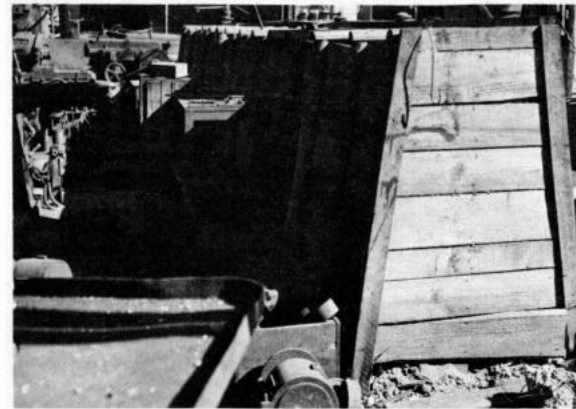
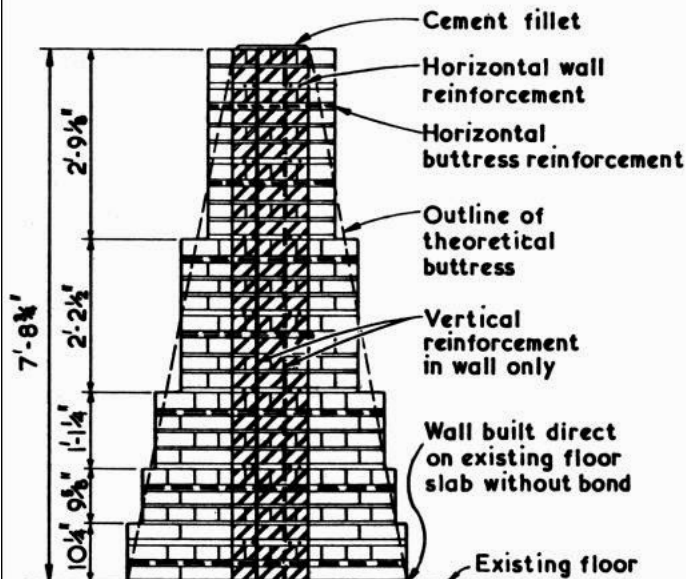
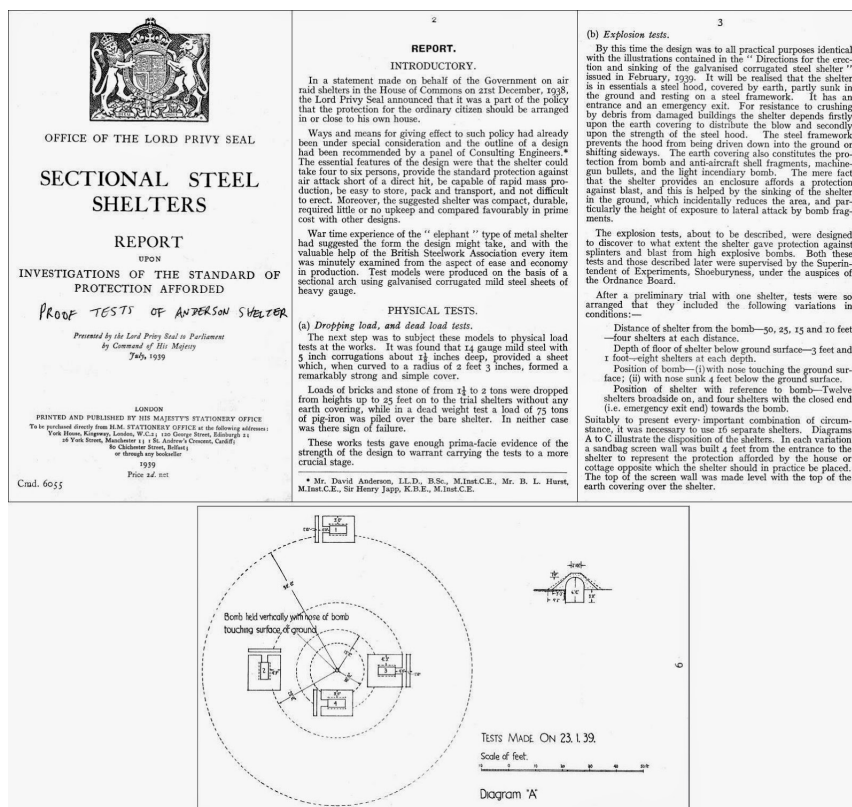


Figure 12.37c. Earth-filled, wooden blast walls protecting machinery (0.85 mile from ground zero at Nagasaki).

Glasstone, *Effects of Nuclear Weapons*, 1957: blast wall

Blast wall is preferably given reinforced foundations to prevent overturning. Steel rod reinforcing rods pass through centre of brick work to ensure that wall is not brittle, but bends when overloaded due to ductility of steel, which absorbs blast energy in deformation (this prevents the wall from becoming dangerous fragments). The wall was proof tested to take 250 kg bomb at 20 feet; cruder blast walls were found intact protecting transformers in Nagasaki after a 21 kt nuclear weapon explosion, 0.85 mile ground range.



Above: As Terrence O'Brien explains in his widely ignored official history of civil defence in the UK in WWII which I scanned in and put on the Internet Archive (it is out of copyright now), communist propaganda focussing on exaggerated gas threats and incendiary bombs diverted civil defence attention by mainstream politicians (who trust left wing newspaper liars) in the 1930s away from the real need for indoor house collapse protection,

relocating the Anderson shelters outdoors and appeasing the Nazis instead of providing real protection.

Richard North inevitably just dismisses O'Brien's history of civil defence as some bizarre kind of anti-communist propaganda by some bizarre kind of evil capitalists trying to maximise deaths in war, which is of course partly the fault of O'Brien for not giving any scientific evidence or even shelter test report summaries to back up his claims for the effectiveness of cheap civil defence bombing countermeasures in WWII. We blame Richard North for failing to do any proper research to ascertain the actual facts we have discussed here, based on actual data. The whole reason why the "climate change" liars have got away with peddling falsehoods is the trash circulated by people like him, who (unless I am mistaken) prefers abusive dogmatic drivel to true scientific reasoning and the detailed facts that most newspapers will dismiss and reject as being "technical copy".

Because they believe that science is a religion with authorities and sacred texts like peer-reviewed lies, you can't criticise groupthink science in mainstream media today without millions of ignorant indoctrinated PhD waving bigots writing in to complain and request the editor to stick to the mainstream theory that they received a grade A for after memorizing a textbook (unless by a fortunate coincidence it happens to coincide with science fantasy of a popular sort, like tales of spaceships entering black holes or similar). This is why it has gone down the tubes. It's now the domain of dishonest power-drunk authority figures and their sycophants, who defend the heroes using "shoot the messenger" abuse directed at all criticisms.

Anyone who tries to politely tell them the real facts about how to save lives in real wars occurring today is simply censored out or attacked (shoot the messenger dictatorship tactics) by powerful, ignorant, bigoted persons who I believe don't really care about the kids being massacred by bomb damage in Syria or any other real problem that cheap, practical information can help defeat. Any attempt at a scientific discussion always turns into a paranoid, emotional tantrum by professional bureaucrats, where the evidence is ignored and is not passed on to Joe Public. Of course, they get applauded by their fashion seeking groupthink consensus-loving fan base of sycophants, while the person telling them the truth is always the one falsely misquoted out of context and dismissed as being the one paranoid or having a tantrum, which is probably just justifiable frustration at being treated so irrationally by power-abusing dogmatic bigots who haven't done a day's really honest work in their lives: "if you get angry, that proves you are wrong." (Quotation from V. Putin, the hero of today's big brother "socialist" dictatorship lovers). (Of course, Putin is an exception to his own rule. If you were to make him angry with facts he doesn't want to hear, I somehow doubt that he would say: "You have made me angry, thus I am wrong.")

Mr Putin now has a rouble crisis due to the sanctions against Russia due to the Crimean War. If this escalates, it will probably do so unpleasantly:

"Russia plunges into fresh crisis with dramatic rouble collapse as pressure piles on Putin

THE RUSSIAN economy plunged into fresh crisis today as the rouble began to free-fall on currency markets, despite dramatic emergency action by the country's central bank.

The price of Russia's currency dropped a whopping 20 per cent against the US dollar earlier today, as it sunk to a series of historic lows. This morning's staggering drop extended yesterday's 10 per cent decline, with a dollar buying 77 roubles by lunchtime in the UK. The rouble has since rallied slightly, but is still 12 per cent down in total today.

A dollar now buys around 65 roubles, a British pound sterling buys 102 roubles and a Euro buys 82 roubles. The plunging price of the rouble is the worst fall since the Russian financial crisis in 1998.

It also appeared to signify a complete loss of confidence in the Russian central bank, following a dramatic interest rate hike this morning. In a failed bid to attract investors, ahead of the opening of global markets, Moscow's central bank raised interest rates to 17 per cent from 10.5 per cent.

Russia has been battered by sliding oil prices as well as Western sanctions following President Vladimir Putin's actions in Crimea and eastern Ukraine.

The ongoing economic collapse now presents Mr Putin with the biggest crisis of his 15-year stranglehold on power. Having enjoyed the

political benefits of economic security, the Kremlin leader could now see growing opposition if Russian voters continue to be affected by market turmoil and falling oil prices.

Nicholas Spiro, managing director of Spiro Sovereign Strategy in London, said: "Putin rode the wave of higher oil prices in the years after he came to power, but there is no question that the economics will start to adversely impact the politics.

"The pieces are falling into place to start to affect the political sustainability of this regime."

Prime Minister David Cameron placed the blame for the rouble rout squarely on Mr Putin's shoulders, following Russia's antagonistic foreign policy in recent months.

Western powers heavily criticised Russia's annexation of the Crimean peninsula in March this year, while Mr Putin has also been accused of secretly backing pro-Russian separatist groups in eastern Ukraine.

Mr Cameron's spokesman said: "The fall in the global price for oil is a global phenomenon but Russia has made itself more vulnerable to economic shocks as a result of the relative isolation through sanctions that it has faced because of events in Ukraine." "If Russia continues to choose not to take the path of de-escalation it will continue to face consequences."

While some will be pleased that "sanctions are working", everybody should remember that when you seal up a pressure boiler and heat up beyond its containment strength, the steam pressure may not always hiss out of a rupturing joint quietly. It may just explode "unexpectedly".

Remember what happened when Germany's economy was crushed first by WWI reparations causing hyperinflation in 1923, then by the 1929 stockmarket crash which ended lucrative international trade exports to America for years, and then by the immense Nazi socialist "full employment" spending programs of the 1930s on weapons, the autobahn, etc. Robbing the rich helped to put off WWII for a few years, but in the end Hitler went off the deep end and invaded Poland, in the belief that a foreign war of conquest to the East would expand the borders and help pay debts, put bread on tables, etc.

The point is, historians tend to ignore the hidden economic agenda impetus behind wars, be it the Nazis or Putin's pressure from the falling price of oil. As we pointed out in the previous post on this blog (24 August 2014), **Putin needs Brent crude oil to average \$117 dollars a barrel just to balance his economy.** (See [here for source of the \\$117/barrel threshold figure.](#)) The Brent crude price has, since that was written in August dropped to just **\$61 dollars a barrel (15 December 2014)**

This doesn't prove that Putin is going to rebuild the USSR or invade America tomorrow to deflect attention from his domestic problems, but while we should not scare monger, please remember the complacency on 7 December 1941 when Japan tried an innovative way to get around an oil sanctions problem imposed by America after it occupied China.

https://ycharts.com/indicators/brent_crude_oil_spot_price

Brent Crude Oil Spot Price: 61.09 USD/bbl for Dec 15 2014 [Add to Watchlists](#)

Overview Interactive Chart News

Brent Crude Oil Spot Price is at a current level of 61.09, down from 61.67 the previous market day and down from 108.08 one year ago. This is a change of -0.94% from the previous market day and -43.48% from one year ago.

Category: Energy

Report: Weekly Petroleum Status

Region: N/A

Source: Energy Information Administration

Brent Crude Oil Spot Price Chart

[View Full Chart](#)

5d 1m 3m 6m YTD 1y 5y 10y Max

Export Data Save Image



Above: "Putin's spending binge means that, for the budget to balance, Brent crude must now average around \$117 a barrel, more than five times the level needed in 2006, according to analysis from Deutsche Bank. Even that is not enough for top officials. Interior Minister Vladimir Kolokoltsev, said last week that, in 2013, the average bribe in Russia had doubled to \$4,000." - Oliver Bullough is Caucasus editor at the Institute of War and Peace Reporting. His most recent book is "The Last Man in Russia", detailing the demographic decline of the Russian nation.

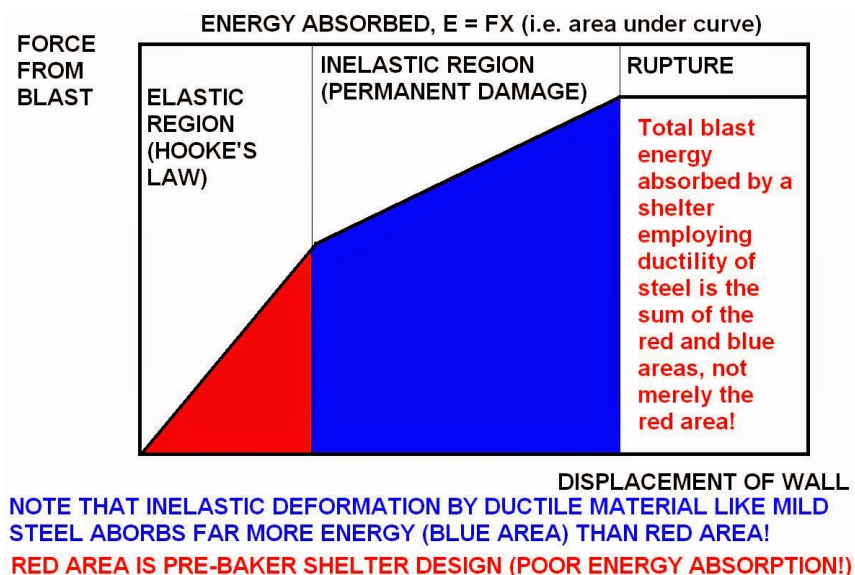
SUMMARY OF KEY FACTS TO REMEMBER FROM THIS ARTICLE:

Lessons for the future can be derived from the following facts:

*If the UK Government indoor sheltering scheme had not been **attacked by influential "anti-war" liars like J. D. Bernal's dangerous groupthink fanatics**, appeasement would not have been needed in 1937 and Hitler could have been deterred or fought with fewer lives lost before he was ready for war (Britain was losing the arms race during the appeasement era, because the enemy was rearming faster, thus instead of "buying time" as Chamberlain's propaganda claimed, it was really losing time because the gap was widening, the traditional approach to this fact is to ignore it and to refuse to learn the lesson!).* Seen this way, it is militant lying "pacifists" who engineered the slaughter of WWII, **by attacking proved civil defence countermeasures using fiction, sophistry and specious nonsense dressed up as reason.** In fact, the real "terrorists" of WWII were not the enemy which never dropped gas bombs during the war, but the liars who spread hate agenda terrorism propaganda before the war in order to foster "tolerance" of racial hatred towards Jews in Stalin's Russia and in Hitler's socialist Germany, to personal acclaim (Nobel peace prizes, media hyperbole, etc.), and who attacked the life-saving indoor shelter policy and replaced it with water flooded Anderson shelters. The media were in a cartel agreement with the motor-mouthed academics who had never done a blast calculation or tested a bomb in their lives, but claimed expertise.

For earlier research, see also a [PDF of the July 1939 British Government report on the results of high explosive proof testing of the World War II Anderson shelter, "Sectional Steel Shelters", Command Paper number 6055](https://archive.org/details/Anderson_shelter), please click here (this PDF document compilation at https://archive.org/details/Anderson_shelter also contains relevant results of nuclear weapon tests).

In 1937, cheap indoor civil defence recommended by the UK Government was falsely claimed by communist physicist J. D. Bernal's "Cambridge Scientists' Anti-War Group" (the precursor to modern lynch mobs like FAS, CND, SANA, Greenpeace, etc.) to be a con, using exaggerations of escalation to gas (including mustard liquid fallout type contamination, a protracted threat like radiation) in world war, by discounting the efficiency of civil defence and exaggerating blast and fire effects. The 1937 scale of "predicted knockout blow" in conventional bombing was equivalent to nuclear war. This is after a proper correction of bomb yield for damaged areas, using the correct scaling laws, which are not linear arithmetic but weaker than linear powers - in other words, bigger bombs produce considerably smaller damage areas per ton of TNT than smaller ones, and they also take longer to destroy the damaged area because the blast arrival time and thermal flash duration over the wider area of destruction gives time for simple evasive action.



Instead of stifling cheap shelter use in the Syrian civil war and other conflicts for anti-nuclear propaganda or for endlessly advocating the end of war through diplomatic means, why not ensure 97.5% survival in totally devastated houses by using proof-tested, cheap indoor technology?



June 1941

Introduction

Not everyone wants to leave home for shelter. Some people can't. Lots of people just prefer to remain in their own house anyway. This inclination is a natural one. It is a sound instinct too, if some protection can be found against the collapse of walls and ceilings.

Shelter indoors allows you to sleep at night in reasonable security and in the warmth and comfort of your house. It also provides handy cover should there be a sudden raid in the day time.

A direct hit cannot be guarded against in any form of home shelter, but the risk of such a direct hit is very small compared with that of a bomb bursting near enough to damage the house or to demolish it. Protection can be obtained in a house even if a bomb demolishes most of it.

The walls, floors and roof of an ordinary house give quite a lot of protection against splinters and blast from a bomb. The idea of an indoor shelter is to make use of this protection and to add safeguards against the other effects of bombs.

The chief of these is the danger of the house falling down. People have often been rescued unhurt from the ruins of demolished houses because they had taken shelter under staircases, or tables, that had by chance been strong enough to protect them from the falling ruins of the house. The chief purpose of the indoor shelters described in this pamphlet is to protect the occupants against injury when the bedroom floor, the roof and other debris fall on them.

They do not provide such easy emergency escape as a garden shelter, but if you are trapped they protect you from the debris till the Rescue Party releases you. Very often, however, though the house has fallen you will be able to release yourself and walk out.

The indoor shelters with which this pamphlet deals are unsuitable for houses with more than two storeys above the shelter room. They are intended chiefly for use in ordinary two-storey houses, but have a margin of strength that will take the weight of an extra storey.



ILLUSTRATION 11
room. If the posts are desirable.

SHELTER at home



3d. ISSUED BY THE MINISTRY OF HOME SECURITY
AND PUBLISHED BY H.M. STATIONERY OFFICE

3 14

Above: this *Shelter at Home* manual containing cheap indoor proof-tested warm, flood-resistant shelter advice, was issued in June 1941, authorized by the new UK Home Secretary Herbert Morrison, a practical socialist and son of a Lambeth policeman, who had common sense and preferred practical, cheap, live saving countermeasures to the ivory tower left-wing outdoor, ground-water flooded Anderson shelter ideology of his predecessor, the so-called Conservative Sir John Anderson. D. C. Burn improved the timber strutting system in Ministry of Home Security Bulletin C14, to protect a refuge room against collapse, which had earlier been illustrated in a simpler way in the 1938 *Protection of your home against air raids* handbook issued to every house in England by Home Secretary Samuel Hoare. That 1938 booklet sensibly advised using builders advice and scaffolding indoors if possible, for secure protection; the problem was that many poor people in the East End London target area really needed more complete, explosion-proof-tested advice, not just the suggestion to use expensive builders for advice or to set up expensive steel scaffolding indoors. What was needed was a diagram of the sort shown above in the June 1941 handbook (because merely propping up a roof without cross-struts causes the risk that an explosion jar may knock the props sideways, so they must be not merely strong enough to take the load, but also kept

upright to provide protection).

Sir John Anderson's communist adviser, physicist J. D. Bernal, ignored all the practical experience from WWI about the flooding of trench shelters by ground water in winter, and advocated partially underground outdoor Anderson shelters (designed by engineer David Anderson, but named after Sir John Anderson, no relation). In both the 1937 Air Raid Precautions handbook number 1, *Personal Protection against Gas*, and in the 1938 householder's handbook, *The protection of your home against air raids*, indoor "refuge room" shelters were advised, based on a wealth of WWI experience of simple indoor improvised scaffolding to prevent the house collapsing on people in a selected refuge area, say a bedroom or under a strong kitchen table, and on gas proofing of rooms to both reduce vapour concentrations, and obviously to protect people from skin burns from mustard gas and lewisite (liquid droplet contamination, which acts through skin in an analogous fashion to persistent nerve gases invented in Nazi Germany). Both these are analogous to the 1980 *Protect and survive* advice of sheltering under a table or lean-to improvised shelter to survive nuclear blast and fallout.

However, this 1937-8 cheap indoor shelter option (proof tested as the photo below shows, for example), did not fit into the political ideology of the appeasement strategists, who wanted peace through surrender or diplomacy with the enemy. Thus, the "Cambridge Scientists Anti-War Group" comprising of J. D. Bernal and others published specious "no-go theorems" to close-down arguments for indoor shelters. These "no-go theorems" consisted entirely of plausible-lie sophistry, for example "ridicule" of indoor shelters by claiming that any future war would consist of blast bombs, incendiary (fire bombs of phosphorus and magnesium), and lingering mustard gas that would burn skin and make gas masks useless outdoors. By blasting and burning down houses, people would - the liars claimed - be forced outdoors where they would then be contaminated by mustard gas and lie awful, lingering deaths. Photographs and paintings from the successful surprise attack gas casualties of WWI would be used to "prove" this and induce anti-war hysteria, with "peace at any price" political bigotry. The fate of the Jews and other persecuted minorities would pale into insignificance in comparison to these fictional rantings, which even led to the gas war horror scenes in the pre-war blockbuster, H. G. Wells' *War of the Worlds* where the Nazis are portrayed as Martians who must be appeased, to avoid the extermination of life on earth by poison gas. Precisely the same "subtle" political "sci fi" agenda occurred in 1969 *Beneath the planet of the apes* where Charlton Heston ends life on earth using a doomsday nuclear weapon in order to prevent the apes - *aka the Reds* - from winning a Cold War. Hidden message: nuclear deterrence is too risky, so negotiate to save lives, even if that means slavery.

"Though the Government Anderson shelter issued to householders ... was structurally sound ... this form of shelter had been made ineffective by the change in the enemy's tactics. The Anderson was essentially a trench shelter ... it shared all the other drawbacks of trenches. It would have been tolerable if ... the enemy raids had been of short duration. However, when the pattern of all-night alerts was established, as happened in London in September 1940 [and in August 1945 in Hiroshima and Nagasaki, when repeatedly daily B-29 weather plane surveys of the cities by the 509th Group from Tinian Island, at attack time for weeks before the bombs eroded the credibility of Japanese air raid warnings for those cities, as recorded by the 509th commander, Col. Tibbets, in his 1978 book *The Tibbets Story*], it was obvious that the Anderson shelter was quite unsatisfactory. ... I approached the Chief Engineer's Branch with the proposal that a shelter should be designed to accommodate a family inside its own house. ... No reply was made ... I persisted firmly but politely ... Nothing happened for some weeks, then a reply ... came from Mr Osmond, a ... senior administrative officer ... It said that ... it was impossible to provide safe shelter inside a house; this had been established in 1938 by a panel of eminent engineers. I was referred to Command Paper 5932. ... The Report had been drawn up by David Anderson, doyen of British civil engineers ... the most successful consulting engineer of his time."

- Lord Baker, *Enterprise Versus Bureaucracy: The Development of Structural Air Raid Precautions During the Second World War*, Pergamon, 1978, pages 42-44.

The December 1938 Command Paper 5932 by David Anderson, which was finally debunked by Lord Baker in 1941, recommended the outdoor Anderson shelters that became waterlogged during the autumn-winter 1940 blitz, and contained a list of no fewer than seven separate no-go theorems that attempted to disprove the safety of indoor shelters (mainly culled from J. D. Bernal's science fiction scare mongering propaganda books).

As Lord Baker proves in chapter 6 of *Enterprise versus Bureaucracy*, all seven "no go theorems" claim to disprove the safety of indoor shelters are specious. To summarize why they are all completely wrong in a nutshell, Anderson's 1938 Cmd. 5932 falsely claimed that:

(1) house refuge rooms would be too small and would prevent the room being used for other purposes (**nonsense, says Lord Baker, just strengthen a bedroom and use it as normal; any room can be strengthened with a strong distortion-resisting wooden frame or steel scaffolding as the 1938 handbook *The protection of your home against air raids*;**

- (2) a house is useless because the windows would be blown, so flying glass or debris from the explosion will be a danger (**nonsense, says Lord Baker, since simple wire mesh was proved strong enough stop heavy debris from entering the sides of the shelter, and anyway for the refuge room you place the shelter where the walls provide the best protection, and you can protect the windows in that particular room very easily with boards or furniture arranged to catch the flying glass as advised in handbooks such as the 1938 *The protection of your home against air raids* or the 1941 *Shelter at Home*;**);
- (3) the rigid shelter would be knocked down through the floor (**nonsense says Lord Baker, the shelter will absorb impact energy through deformation and thus won't pass on the same amount of impulse that it receives, cushioning the blow like a car crumple zone or bumper and not being simply knocked downwards with the same impulse that it receives!;**);
- (4) the shelter would be moved and distorted (**nonsense, says Lord Baker, who cares about a bit of distortion or movement provided the people inside are safe and sound? Besides, absorbing energy through structural distortion is vital for a shelter to cheaply absorb energy and thus save lives. A shelter which undergoes no distortion is a death trap that doesn't absorb energy and passes on massive accelerations to the shelter occupants, resulting in large forces and injury or mortality.**);
- (5) the people in an indoor shelter will be trapped by debris and suffocated by dust or a lack of air (**nonsense, says Lord Baker, a table can be vacated from any side, and you can always simply keep sheets or handkerchiefs and crowbars or similar tools in the indoor shelter to help you avoid dust and escape quickly. Civil defence critics always try to exploit data on "trapped" casualties from the 1940 air raids before the Morrison indoor shelter was introduced and before mechanical cranes were used for quick and easy heavy rescue. Thus, people "trapped" in Morrison shelters were uninjured and could release themselves quickly in most cases, as proved by the data.**);
- (6) incendiary bombs combined with high explosives would collapse and then burn houses so people trapped will be fried alive (**nonsense, says Lord Baker, only one person out of 119 people in indoor shelters within collapsed houses died as a result of burns, and even then it was due to a fire brigade error when the sprayed the flames with water, causing scalding water to flood a shelter that was otherwise surviving the fire from the house debris above, because heat rises instead of falling as academics who are ignorant of the facts always seem to naively assume; the same applies to nuclear ignition of curtains in the top floors of buildings in nuclear attacks, where the fire doesn't spread downwards contrary to "9/11 evidence" because the nuclear bomb doesn't deliver thousands of gallons of burning aviation fuel that can be carried downwards to lower floors by gravity; likewise, the "evidence" of people burned alive by peacetime gasoline car fires where clothing is soaked by gasoline before being ignited is not applicable to the ignition of clothing by nuclear attack, where it can be easily rolled out without injury as proved at Hiroshima and Nagasaki and nuclear tests**); and
- (7) the indoor shelter occupants would be gassed, perhaps by the escape of gas from ruptured gas mains because gas masks do not absorb methane, etc. (**nonsense, says Lord Baker, this supposes that a collapsed house magically forms a sealed chamber around the indoor shelter that allows a gas concentration to build up, in fact this is just total nonsense and while the shelter would keep out droplets of liquid mustard, lewisite or sarin nerve agent, it would not seal in toxic gases so gas masks are adequate once the dust settles.**)

"If the occupants could not escape immediately they ran no danger of suffocation since the side panels prevented debris covering them. ... if anyone trapped had their hands free, and so could cover their faces, as they instinctively did [handkerchiefs or any cloth could be used over the mouth and nose], this was sufficient to prevent injury from dust. **The risk from fire was not serious**; the dust and debris thrown up were most effective in putting out fires. [After Winston Churchill, the Prime Minister, was given an explanation by Baker on 31 December 1940 that "energy absorption" by an indoor shelter's distortion would CHEAPLY save lives, whereas mere "structural strength" for shelters was would not save lives cheaply, he approved 500,000 Morrison shelters.] ... The day may have been won, but unfortunately even the Prime Minister's instructions to make half a million in three months did not automatically produce the materials for the job. The ... wire in wartime belonged to the Admiralty who were not anxious to part with any. Home Security was told that no wire was available ... Those days of working with the supply department ... were not pleasant ... There was no feeling of co-operating to produce the best possible shelter. Whenever a deadlock was reached, the attitude at Headquarters was, 'Well, Baker, that puts *your* shelter out. ... When debris struck the [wire mesh] panel it bent inwards and brought this bottom length of wire hard up against the ferrule [see diagram below] on the bolt, so that the full tensile strength of the vertical wires could be developed to resist the pressure of the debris. The brilliance of this simple piece of production engineering was that it enabled the side panel to be opened by hinging not only about its top edge, but alternatively, about its bottom edge. [Hence the debris-stopping wire mesh panels on shelter sides enabled easy escape not only from any side of the shelter but also from any edge of the panel if debris was jammed against any part of a panel! This was always ignored by Morrison shelter "critics" who falsely claim that the side panels would hinder escape or would not

exert their full structural strength in stopping debris!] ... It was a structure for which the materials were available to make half a million within the next three months and one simple enough for mass production without taxing the resources of the steel fabricating industry or straining the tax payer excessively, yet efficient enough to save the occupants of any house reduced to ruins ... they could be fitted together by unskilled labour, usually by Boy Scout volunteers."

- Lord Baker, *Enterprise versus Bureaucracy: The Development of Structural Air Raid Precautions During the Second World War*, 1978, pages 51-57.

The point is, gas proof rooms keep the liquid droplets of persistent "gas" like mustard or nerve agents sarin and VX, off the skin, while the gas mask keeps the vapour out of the eyes and lungs, so the two in combination - staying indoors and using a gas mask - are mutually compatible and if a window breaks you can stay clear of the windows and still have protection against the rain of droplets of persistent nerve liquid droplets; the Nazis invented nerve gas from 1938 onwards and never used it because we could retaliate with mustard and we could retaliate credibly because we had simple, effective civil defence. The tendency to discount gas masks as useless against skin contamination and to discount refuge rooms as not being gas resistant if windows are broken by blast is sophistry, since it ignores the fact about the liquid rain of contamination that a house protects against, regardless of damage, and the fact that toxic vapours - once the rain of droplets has been kept outdoors - are far more damaging to the eyes and lungs than to the skin, so that once you protect the skin from droplets by being under cover, the gas mask then gives a very high protection factor. Soldiers are issued protective clothing to wear against liquid droplet sprays or very high concentrations of vapor for long periods of time. Indoors, gas masks are sufficient. It is thus easy to identify the fear-mongering dogmatic supporters of (or even generators of) hysterical terror (i.e. real "terrorism"), who *deliberately exploit ignorance in order to try to pretend that there is no cheap defense available to gas attack or radiation, blast or fire.*

They all do so because they religiously believe in some "alternative" to civil defence, such as military retaliation to escalate the war, or an ever increasing budget for secret spies to try to prevent attacks by infiltrating and somehow understanding the minds of the lunatic enemies on the basis that only spying can prevent 9/11 or Pearl Harbor and not civil defence and that any failures of spying have a simple fool-proof solution which is called *"increase the spying budget again until it is big enough to guarantee peace-in-our-time"*, or more often they believe in increased budgets for Nobel Peace Prize lobbies that call for more money to be given to themselves to study the hope of passing more and more laws and policing of corrupt foreign terror regimes, who simply ignore or violate those laws, like Hitler and Stalin did. The problem of "simply policing" international laws then effectively falls back into the problem Britain faced in 1914 and 1939, i.e. you can't enforce any international law without a world war. All the "pacifist" sophistry in the world is just a camouflage for escalating violence, whether this is named "ethnic cleansing" or attacking civil defence. All these people actually profit from terrorism, that is, they profit from the failure of their own schemes, because they are rewarded for failure with more money. So all have a massive interest in blocking realistic, cheap civil defence against terrorism! Because of the hatred directed in the media towards all forms of life-saving civil defence which are cheap, realistic, and highly effective, liars received public cheers and election votes from persuading Hitler to sign a worthless "peace treaty"; whereas humanitarian, honest and decent people were attacked using ignorant, conceited, groupthink lynch mob tactics and called a warmonger if they even dared to promote a practical way to stop carnage.


Any exposure of the facts is dismissed/ignored by using attacks on the person/presentation, instead of simply and honestly discussing the relevant facts themselves (facts are all important, opinions or presentation tricks are not the stuff that matters and anyone who prefers to discuss presentation to the facts is missing the point or deliberately engaging in self-indulgent egotism/drivel rather than keeping to the hard facts of science).

Campaigns were launched by CND's Phil Bolsover and other communist supporters to attack proven civil defence to popular acclaim from comedians on BBC TV in the early 1980s, thus they are the war-mongers for all intents and purposes, launching scare-mongering hate campaign attacks on scientific civil defence for their own profit or the profit of their deluded politics:

*2.5% of people were killed in cheap indoor Morrison shelters in houses subjected to total collapse (Baker, 1978).
23.5% of people were killed while ducking and covering in houses subjected to total collapse (RC450, 1945).
61.9% of people were killed when caught totally unprepared in houses subjected to total collapse (S118, 1946).*

See also https://archive.org/details/Anderson_shelter as well

as <https://archive.org/details/BritishNuclearTestOperationHurricaneDeclassifiedReportsToWinston>
and <http://archive.org/details/TheEffectsOfTheAtomicBombOnHiroshima>

posted by Nuclear Weapons Effects 10:51 a.m. 

9 COMMENTS:

At 9:47 a.m.,  Anonymous said...

President Putin's bear is getting annoyed chasing after President Obama, Putin reports

<http://foreignpolicy.com/2014/12/18/putin-says-russian-bear-isnt-about-to-sit-back-and-just-eat-berries-and-honey/>

FOREIGN POLICY

Putin Says Russian Bear Isn't About to Sit Back and Just Eat Berries and Honey

BY REID STANDISH

Reid Standish is an Editorial Researcher at Foreign Policy. A native of British Columbia, he holds a BA in international studies from Simon Fraser University and an MA from the University of Glasgow. He has lived in Kazakhstan, Kyrgyzstan, and Ukraine, where he reported on drug trafficking, environmental degradation, and the Eurasian Union.

DECEMBER 18, 2014 - 1:57 PM REID.STANDISH@REIDSTAN

... is country's economy is in a tail-spin amid Western sanctions. The ruble is tanking. And Russian meddling in Ukraine now looks less cunning and more blundering. ...

... "Sometimes I think that maybe it would be best if our bear just sat still. Maybe he should stop chasing pigs and boars around the taiga but start picking berries and eating honey," Putin said, using the metaphor of the bear as a stand-in for Russia. "Maybe then he will be left alone. But no, he won't be! Because someone will always try to chain him up. As soon as he's chained they will tear out his teeth and claws. In this analogy, I am referring to the power of nuclear deterrence."

At 4:31 p.m.,  nige said...

Anonymous,

I'm more concerned about the following news than about Putin's reference to the Russian bears claws being equivalent to nuclear war:

<http://www.theguardian.com/world/2014/dec/19/vladimir-putin-invites-north-korea-kim-jong-un-moscow>

Vladimir Putin invites Kim Jong-un to Moscow

North Korea's leader may travel to Russia to mark the USSR's victory over Nazi Germany on 9 May as mark of closer relations

Reuters

The Guardian, Friday 19 December 2014 14.11 GMT

"Yes, such an invitation was sent," a Kremlin spokesman, Dmitry Peskov, told the state news agency, Tass. Russia marks the former Soviet Union's 1945 victory every year on 9 May.

Moscow needs North Korean cooperation to boost its natural gas exports to South Korea as Gazprom would like to build a gas pipeline through North Korea to reach its southern neighbour.

Pyongyang is also seeking support from Russia, a permanent veto-wielding member of the UN security council, against international criticism relating to accusations of human rights abuses and its nuclear programme.

Remember what happened when Germany's leader got together with Italian dictator Mussolini, Stalin (in the secret 1939 pact to jointly invade Poland from opposite sides, thus Stalin's Katryn Forest Massacre of Polish officers) and later the Japanese Emperor who had invaded China?

Single, hungry bears prowling aggressively are unlikely to start WWII by themselves. It's when they get really crazy allies that you get groupthink setting in, secret agreements to jointly invade and carve up countries, and that's what's really dangerous and hard for foreign intelligence to infiltrate and understand. Any psychologist will tell you, Putin is no enigma, but in groups there is always madness, unpredictable plots and plans.

In 1997, Russia declared an arsenal of 39,967 tons of chemical weapons, but only 57% has been destroyed up to Dec 2014! We still face a threat of chemical warfare, conventional warfare, and that's before you consider the final nuclear WWII. Russia has about 2,000 nuclear warheads in an immediately operational state, and in total has 8,000 nuclear warheads (75% of which are in parts that could be assembled during a protracted war). Despite fear-mongering anti-nuclear biased exaggerations of the effects of nuclear war, that's still a very big claw for breaking city windows and contaminating, that can be damaging to the West. But then you have to factor in other potential allies in a big West-versus-East conflict, like Iran, North Korea and China. The recently banned Hollywood film "The Interview", showing the CIA assassination plot for the North Korean dictator, is also inflaming tensions. There are lots of potential sparks for conflict around the world.

At 4:42 p.m., @nige said...

"I can fight the world bear-back" (macho image) is a problem for Putin.

Putin, 62, is seeing mistress Alina Kabayeva, 32, a beautiful ex-Olympic gymnast 30 years his junior.

Hitler, 56, married mistress Eva Braun, 33, who was 23 years his junior.

In each case, crazy macho "I can fight on all fronts, everyone at once" decisions were taken by an ageing dictator to convey impressiveness and charisma to a younger woman.

I'm not saying that Alina Kabayeva now runs Russia by controlling Putin, but there's statistical evidence in opinion polls of Putin's status in Russia, proving some kind of bizarre love connection with the invasion of Crimea and his perceived charm by Russian women, including Alina.

At 5:40 p.m., @nige said...

Update: the UK National Archives at Kew has today (30 December 2014) released files showing that Prime Minister Margaret Thatcher called for Britain to get new chemical weapons to deter Russian chemical weapons in 1985.

See: <http://www.theguardian.com/uk-news/2014/dec/30/thatcher-chemical-weapons-national-archives/print>

Thatcher considered UK chemical weapons programme, documents show

File released by National Archives reveals PM examined how UK could retaliate in case of Soviet chemical attack

Owen Bowcott

Follow @owenbowcott Follow @guardian

The Guardian, Tuesday 30 December 2014

Margaret Thatcher considered restarting Britain's chemical weapons (CW) programme at a cost of up to £200m in response to Soviet threats, Downing Street correspondence reveals.

The prime minister, by training a research chemist, acknowledged that the government might be considered negligent for failing to acquire a "retaliatory capability" at the height of the cold war.

Secret papers canvassing the military options available have emerged from a Home Office file, released on Tuesday by the National Archives in Kew, which contains warnings that airborne chemical attacks by Soviet aircraft on sensitive UK targets could inflict massive loss of life.

One civil defence paper estimated that up to 140,000 people could be injured and more than 20,000 killed if Liverpool's dockyards were hit by lethal gases. If Gatwick was struck, medical modelling suggested, there would be about 30,000 casualties and 16,000 dead.

The UK had ratified the Geneva protocols in 1930, which banned the use of toxic gases and bacteria in war. But the treaty did not outlaw development or production of such weapons of mass destruction and permitted their use in retaliation.

The communist bloc's expanding stockpile of nerve agents alarmed Ministry of Defence planners who warned that there was no military response short of escalating directly to nuclear conflict. ...

In February 1984, the prime minister attended a CW briefing in the chief of staff's room at the MoD along with the defence secretary, then Michael Heseltine, ...

"Nato has no capability to retaliate in kind, although the Americans have a small stockpile not declared to Nato," civil servants reported. "The threat of nuclear retaliation in response to a chemical attack is our only deterrent and is not credible in all circumstances.

"MoD are currently considering proposals for issuing ... protective suits to UK-based servicemen and essential supporting staff. There is however little public awareness of the threat outside official circles, no civil defence plans are yet made against chemical weapons and no formal guidance has been issued."

Another note recorded: "Chemical warfare is likely to be an emotional issue and any increase in public awareness is, if possible, best delayed until the general public can be given credible guidance on protection measures."

...

It observed that the military chiefs of staff believed the only effective and credible deterrent to Soviet use of chemical weapons was "the ability to retaliate in kind".

Among retaliatory options proposed were offering "practical support to the US administration by permitting the forward basing of US delivery systems and storage of CW in this country in time of tension or even in peacetime. A variation would be to offer to provide delivery systems ourselves ...

"Finally there is the option of acquiring an independent UK retaliatory capability, based perhaps on American technology. The cost would be of the order of £100m to £200m. Such a decision would be a last resort should all other options fail."

At 5:45 p.m., @nige said...

Also released to UK National Archives today Tue 30 December 2014: Thatcher's plans for shelters against Russian chemical weapons! See:

<http://www.dailymail.co.uk/news/article-2891112/Secret-plan-chemical-weapons-shelters-gardens-ditched-warning-families-run-air.html>

Revealed: How secret government plan for a chemical weapon 'Anderson' shelter in every British garden was ditched when they realised families would run out of air

Plan drawn up by Home Office in 1985 amid fears of Soviet Union attack

Shelter measuring 7 cubic metres would have enough air for 2-3 hours

Experts said shelters needed to be sealed for up to 10 hours after an attack

Margaret Thatcher also wanted Britain to acquire chemical weapons

By CLAIRE ELLICOTT and DAVID WILKES FOR THE DAILY MAIL

PUBLISHED: 12:05, 30 December 2014 | UPDATED: 15:17, 30 December 2014

Home Office officials secretly considered plans to provide homes with chemical weapons shelters amid fears of an attack by the Soviet Union - but the scheme quickly ran into difficulties.

Files released by the National Archives show that the plan foundered after experts pointed out that people would have to remain in the sealed shelters for up to 10 hours in the aftermath of a chemical attack.

It also emerged that Margaret Thatcher wanted Britain to acquire chemical weapons to counter the Soviet threat during the Cold War.

The plan to offer families shelters to protect them from chemical weapons emerged in the last amid fears of an attack by the Soviet Union

'As the cubic capacity was approximately 7 cubic metres, four people could be supported in the enclosed air for only about 2-3 hours,' the minutes of a meeting from April 1985 noted.

It was suggested that the air supply could be extended through the use of fans and filters - but again there was a difficulty.

'It was immediately realised that finding room for them might be a problem,' the minutes noted.

...

A Ministry of Defence paper from 1984 underlined the scale of the threat with an assessment that the Russians had over 300,000 tons of nerve agents alone.

In contrast, United States – which was the only Nato member to possess a chemical warfare (CW) capability – had an ageing stockpile of just 31,000 tons which was not actually declared to Nato.

Britain abandoned its chemical weapons programme in the 1950s and kept only a nuclear capability, which was deemed a disproportionate response to an isolated chemical weapons attack on troops.

In another secret paper from 1983, officials make predictions of the death toll if the Soviet Union attacked Britain with chemical weapons.

A Home Office working group calculated that a Russian CW attack by just three aircraft on Gatwick Airport would leave 16,350 dead and 29,000 injured while a similar attack on Southampton dockyard would kill 33,350 and leave 42,000 injured.

At 6:08 p.m., @nige said...

For the 31 December 1937 British Home Office report on chemical warfare protection tests of simple countermeasures see

<http://archive.org/stream/ExperimentsInAnti-gasProtectionOfHouses/AntigasProtectionOfHouses#page/n0/mode/2up>

The Home Office actually proof tested air tight rooms at Porton against real war gases, including the mustard gas agent that the Russians had, in their 31 December 1937 report "Experiments in Anti-Gas Protection of Houses" which I scanned in and uploaded to the Internet Archive as a free PDF file. This led to the 1938 Home Office civil defence booklet, "The protection of your home against air raids" (with a Foreword by Samuel Hoare), which shows the householder how to shut doors and windows and seal up cracks in the door frames and key holes, to keep out gas while it disperses. You keep droplets of liquid mustard or nerve agent off you using any rain proof clothing or being indoors. You only need a gas mask for volatile (non persistent) agents if they can ingress to a room. The vapour pressure of any chemical warfare agent is inversely proportional to its persistence, so the very slowly evaporating VX nerve gas in cold weather is mainly a droplet (not inhalation) danger.

Compare the 1938 manual to Sir John Anderson's updated 1940 manual, "Air Raids: What you must know, what you must do."

<http://archive.org/stream/AirRaids/AirRaidsHandbook#page/n0/mode/2up>

At 6:16 p.m., @nige said...

The dismissal of protection against chemical war agents based on penetration after 10 hours seems like another dotty "no go theorem" against civil defence, because every chemical agent has a different persistence, which in any case depends on temperature and the concentration of the liquid deposit.

For volatile chemical war agents (i.e. those with boiling points below the ambient temperature, like chlorine), there is no persistence at all so the cloud duration is simply determined by the time taken to release the gas (e.g., the time an aircraft passes overhead), and the wind speed which blows the gas cloud away. Mustard and VX nerve gas are persistent, but even then the time they remain a threat is dependent on temperature and concentration, and is not a fixed 10 hours!

At 6:25 p.m., @nige said...

For some recent research on cheap chemical warfare civil defence, please see the Internet Archive compilation linked here.

As stated above, in 1997 Russia declared an arsenal of 39,967 tons of chemical weapons, but only 57% has been destroyed up to Dec 2014! We still face a threat of chemical warfare so this civil defence is still appropriate if international tensions persist and escalate.

At 5:09 p.m., @nige said...

11 Jan 2015.

Note about the 17 people killed in Paris by IS terrorists, 7-9 January 2015, after French magazine Charlie Hebdo published cartoons breaking a taboo by depicting the Prophet Mohammed.

On 7 July 2005, 52 people were murdered and 700 injured by jihad terrorists in London. Dogmatically, "Liberalism" means elitist apologists expressing hatred and intolerance towards freedom of expression, especially intolerance to humorous attacks on jihad terrorists and their fraternity. The million people now marching in France in solidarity with the murdered journalists and Jews under banners like "Je suis Charlie" are therefore in need of some "political correction". The "politically correct" view would be that the terrorists are a minority and are misrepresenting Islam, while the Charlie Hebdo cartoons depicting Mohammed were an affront to many more Muslims than the number of terrorists. It is always a minority of corrupt fanatics which cause evil. It was a minority of Germans and a minority of Russians that caused the biggest 20th century bloodshed.

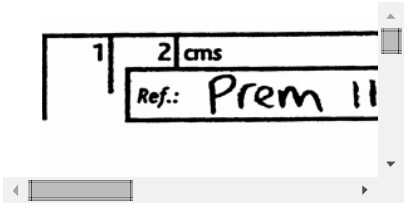
The 17 killed is exactly the same number that the nutter Thomas Hamilton killed in the Dunblane school massacre in Scotland on 13 March 1996. This isn't totally unprecedented. If you remember, we had endless IRA terrorist bombing of innocent people in the UK for decades. That didn't mean that all Irish Catholics were guilty.

Thus, the truth is that the 17 dead in France is but a small number compared to the many thousands of innocent civilians being killed in the battle between Shia and

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CONVENTIONAL WARS HAVE KILLED TENS OF MILLIONS OF PEOPLE, NUCLEAR WEAPONS CAN RAPIDLY DETER THIS REAL THREAT TO PEACE WITH MINIMAL CASUALTIES. 'During the critical period 8-15 February [1968], the U.S. command realized [that conventional] bombing was not sufficiently effective. ... The air campaign dropped over 110,000 tons of bombs and napalm on the area around Khe Sanh during the 77-day siege ... the most heavily bombed target in the history of conventional warfare.' – W. C. Yengst, S. J. Lukasik, and M. A. Jensen, *Nuclear Weapons that went to War*, SAID report DSWA-TR-97-25, September 1998 (quoted in the 2015 book by the secret *Capabilities of Nuclear Weapons* editor, Dr Harold L. Brode, *Nuclear Weapons in the Cold War*, page 287). [British Nuclear Test Civil Defence Research](#)



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- 1

 of 24

CHANGE 1

Field Manual No 101-31-1

NUCLEAR WEAPONS EMPLOYMENT DOCTRINE AND PROCEDURES

Radius of vulnerability (emergency risk criterion: 5% combat ineffective)

Figure 54. Radii of Vulnerability.

| CATEGORY | PERSONNEL (LL) IN— (Based on Governing Effect) | | | | |
|--|---|------------------|------|-------|------------------|
| | Open | Open Foxholes | APCs | Tanks | Earth Shelter |
| Radii listed are distances at which a 5 percent incidence of effect occurs. HOB used is $60W^{1/3}$ meters. | | | | | |
| Yield (KT) | | | | | |
| (Distances are in meters) | | | | | |
| 0.1 | 700 | 600 | 600 | 500 | 300 |
| 1 | 1200 | 900 | 900 | 800 | 500 |
| 10 | 3200 | 1300 | 1300 | 1250 | 900 |
| 20 | 4000 | 1500 | 1450 | 1400 | 1000 |
| 100 | 8000 | 1900 | 1800 | 1800 | 1400 |
| 200 | 12000 | 2000 | 1900 | 1900 | 1500 |
| 300 | 14000 | 2100 | 1950 | 1950 | 1600 |

**Protective factor = ratio of
area of effect in the open,
area of effect for shelter**

**Example: for 300 kt, the protective
factor of open foxholes is equal to
 $(14,000)^2 / (2,100)^2 = 44$.**

| Open | Open Foxholes | APCs | Tanks | Earth Shelter |
|------|------------------|------|-------|------------------|
| 1 | 1.36 | 1.36 | 1.96 | 5.44 |
| 1 | 1.78 | 1.78 | 2.25 | 5.76 |
| 1 | 6.06 | 6.06 | 6.55 | 12.6 |
| 1 | 7.11 | 7.61 | 8.16 | 16.0 |
| 1 | 17.7 | 19.8 | 19.8 | 32.7 |
| 1 | 36.0 | 39.9 | 39.9 | 64.0 |
| 1 | 44.4 | 51.5 | 51.5 | 76.6 |

Calculation of the injury-averting protective factors by simple open foxholes and earth shelter function of weapon yield. Most countermeasures are relatively ineffective against tactical nuclear weapons (due to the predominating neutron radiation effect at 0.1 kt yield), but are extremely effective against strategic nuclear weapons with yields of 100, 200 and 300 kt (protective factors of 44 to 76.6).

The definition of protective factor used here is the factor by which casualties numbers are reduced.

Richard P. Feynman, 'This Unscientific Age', in *The Meaning of It All*, Penguin Books, London, 1998, pages 106-9:

'Now, I say if a man is absolutely honest and wants to protect the populace from the effects of radioactivity, which is what our scientific friends often say they are trying to do, then he should work on the biggest number, not on the smallest number, and he should try to point out that the [natural cosmic] radioactivity which is absorbed by living in the city of Denver is so much more serious [than the smaller doses from nuclear explosions] ... that all the people of Denver ought to move to lower altitudes.'

"If a man reads or hears a criticism of anything in which he has an interest, watch ... if he shows concern with any question except 'is it true?' he thereby reveals that his own attitude is unscientific. Likewise if ... he judges an idea not on its merits but with reference to the author of it; if he criticizes it as 'heresy'; if he argues that authority must be right because it is authority ... The path of truth is paved with critical doubt, and lighted by the spirit of objective enquiry... the majority of people have resented what seems in retrospect to have been purely matter of fact ... nothing has aided the persistence of falsehood, and the evils resulting from it, more than the unwillingness of good people to admit the truth ... the tendency continues to be shocked by natural comment, and to hold certain things

too 'sacred' to think about. ... How rarely does one meet anyone whose first reaction to anything is to ask: 'is it true?' Yet, unless that is a man's natural reaction, it shows that truth is not uppermost in his mind, and unless it is, true progress is unlikely."

- Sir Basil Henry Liddell Hart, *Why Don't We Learn from History?*, PEN Books, 1944; revised edition, Allen and Unwin, 1972.

Civil defense countermeasures, to be taken seriously by the population, require the publication of solid facts with the scientific evidence to support those facts against political propaganda to the contrary. Secrecy over the effects of nuclear weapons tests does not hinder plutonium and missile production by rogue states, but it does hinder civil defense countermeasures, by permitting lying political propaganda to go unopposed (see linked post, here).

Terrorists successfully prey on the vulnerable. The political spreading of lies concerning threats and the alleged 'impossibility' of all countermeasures, terrorizing the population in order to 'justify' supposedly pro-peace disarmament policies in the 1920s-1930s, resulted in the secret rearmament of fascist states which were terrorizing the Jews and others, eventually leading to World War II.

Political exaggerations about nuclear weapons effects today:

(1) encourage terrorist states and other groups to secretly invest in such weapons to use either for political intimidation or for future use against countries which have no countermeasures, and

(2) falsely dismiss, in the eyes of the media and the public, cheap relatively effective countermeasures like civil defense and ABM.

Therefore, doom-mongering media lies *make us vulnerable to the proliferation threat* today in two ways, just as they led to both world wars:

(1) Exaggerations of offensive technology and a down-playing of simple countermeasures such as trenches, encouraged belligerent states to start World War I in the false belief that modern technology implied overwhelming firepower which would terminate the war quickly on the basis of offensive preparedness: if the facts about simple trench countermeasures against shelling and machine guns during the American Civil War had been properly understood, it would have been recognised by Germany that a long war based on munitions production and logistics would be necessary, and war would have been seen to be likely to lead to German defeat against countries with larger overseas allies and colonies that could supply munitions and the other resources required to win a long war.

(2) Exaggerations of aerial bombardment technology after World War I led to disarmament 'supported by' false claims that it was impossible to have any defense against a perceived threat of instant annihilation from thousands of aircraft carrying gas and incendiary bombs, encouraging fascists to secretly rearm in order to successfully take advantage of the fear and vulnerability caused by this lying political disarmament propaganda.

Contrived dismissal of civil defense by Marxist "Cambridge Scientists Anti-War Group" bigots: (a) appeased war-mongering enemies, and (b) maximised war mortality rates. Idealism kills. Super effective, fully proof-tested, cheap civil defense makes nuclear deterrence credible to stop conventional war devastation by avoiding collateral damage, tit-for-tat retaliation and escalation.

Historically, it has been proved that having weapons is not enough to guarantee a reasonable measure of safety from terrorism and rogue states; countermeasures are also needed, both to make any deterrent credible and to negate or at least mitigate the effects of a terrorist attack. Some people who wear seatbelts die in car crashes; some people who are taken to hospital in ambulances, even in peace-time, die. Sometimes, lifebelts and lifeboats cannot save lives at sea. This lack of a 100% success rate in saving lives doesn't disprove the value of everyday precautions or of hospitals and medicine. Hospitals don't lull motorists into a false sense of security, causing them to drive faster and cause more accidents. Like-minded 'arguments' against ABM and civil defense are similarly vacuous.

'As long as the threat from Iran persists, we will go forward with a missile system that is cost-effective and proven. If the Iranian threat is eliminated, we will have a stronger basis for security, and the driving force for missile-defense construction in Europe will be removed.'

- President Obama, Prague Castle, Czech Republic, 4 April 2009.

Before 9/11, Caspar Weinberger was quizzed by skeptical critics on the BBC News program *Talking Point*, Friday, May 4, 2001: *Caspar Weinberger quizzed on new US Star Wars ABM plans*:

‘The [ABM] treaty was in 1972 ... The theory ... supporting the ABM treaty [which prohibits ABM, thus making nations vulnerable to terrorism] ... that it will prevent an arms race ... is perfect nonsense because we have had an arms race all the time we have had the ABM treaty, and we have seen the greatest increase in proliferation of nuclear weapons that we have ever had. ... So the ABM treaty preventing an arms race is total nonsense. ...

‘You have to understand that without any defences whatever you are very vulnerable. **It is like saying we don't like chemical warfare - we don't like gas attacks - so we are going to give up and promise not to have any defences ever against them and that of course would mean then we are perfectly safe. ...**

‘The Patriot was not a failure in the Gulf War - the Patriot was one of the things which defeated the Scud and in effect helped us win the Gulf War. One or two of the shots went astray but that is true of every weapon system that has ever been invented. ...

‘The fact that a missile defence system wouldn't necessarily block a suitcase bomb is certainly not an argument for not proceeding with a missile defence when a missile that hits can wipe out hundreds of thousands of lives in a second. ...

‘The **curious thing about it is that missile defence is not an offensive weapon system - missile defence cannot kill anybody. Missile defence can help preserve and protect your people and our allies, and the idea that you are somehow endangering people by having a defence strikes me almost as absurd as saying you endanger people by having a gas mask in a gas attack. ...**

‘President Bush said that we were going ahead with the defensive system but we would make sure that nobody felt we had offensive intentions because we would accompany it by a unilateral reduction of our nuclear arsenal. It seems to me to be a rather clear statement that proceeding with the missile defence system would mean fewer arms of this kind.

‘You have had your arms race all the time that the ABM treaty was in effect and now you have an enormous accumulation and increase of nuclear weapons and that was your arms race promoted by the ABM treaty. Now if you abolish the ABM treaty you are not going to get another arms race - *you have got the arms already there* - and if you accompany the missile defence construction with the unilateral reduction of our own nuclear arsenal then it seems to me you are finally getting some kind of inducement to reduce these weapons.’

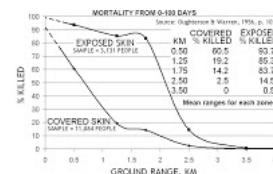
Before the ABM system is in place, and afterwards if ABM fails to be 100% effective in an attack, or is bypassed by terrorists using a bomb in a suitcase or in a ship, civil defense is required and can be effective at saving lives:

‘Paradoxically, the more damaging the effect, that is the farther out its lethality stretches, the more can be done about it, because in the last fall of its power it covers vast areas, where small mitigations will save very large numbers of people.’

- Peter Laurie, *Beneath the City Streets: A Private Inquiry into the Nuclear Preoccupations of Government*, Penguin, 1974.

‘The purpose of a book is to save people [the] time and effort of digging things out for themselves. ... we have tried to leave the reader with something tangible – what a certain number of calories, roentgens, etc., means in terms of an effect on the human being. ... we must think of the people we are writing for.’

– Dr Samuel Glasstone, DSc, letter dated 1 February 1957 to Colonel Dent L. Lay, Chief, Weapons Effects Division, U.S. Armed Forces Special Weapons Project, Washington, D.C., pages 2 and 4, concerning the preparation of *The Effects of Nuclear Weapons*.



Glasstone and Dolan stated in *The Effects of Nuclear Weapons* (1977), Table 12.17 on page 546, that the median distance in Hiroshima

for survival after 20 days was 0.12 miles for people in concrete buildings and 1.3 miles for people standing outdoors. Therefore the median distances for survival in modern city buildings and in the open differed by a factor of 11 for Hiroshima; the difference in areas was thus a factor of 11^2 or about 120. Hence, taking cover in modern city buildings reduces the casualty rates and the risks of being killed by a factor of 120 for Hiroshima conditions, contrary to popular media presented political propaganda that civil defence is hopeless. This would reduce 120,000 casualties to 1,000 casualties.

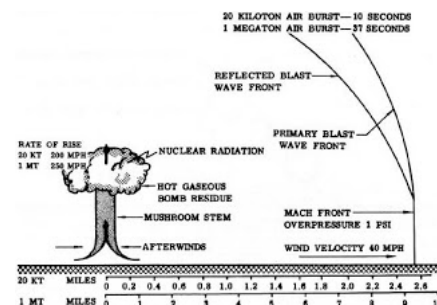
From Dr Glasstone's *Effects of Nuclear Weapons* (1962/64 ed., page 631): 'At distances between 0.3 and 0.4 mile from ground zero in Hiroshima the average survival rate, for at least 20 days after the nuclear explosion, was less than 20 percent. Yet in two reinforced concrete office buildings, at these distances, almost 90 percent of the nearly 800 occupants survived more than 20 days, although some died later of radiation injury. Furthermore, of approximately 3,000 school students who were in the open and unshielded within a mile of ground zero at Hiroshima, about 90 percent were dead or missing after the explosion. But of nearly 5,000 students in the same zone who were shielded in one way or another, only 26 percent were fatalities. ... survival in Hiroshima was possible in buildings at such distances that the overpressure in the open was 15 to 20 pounds per square inch. ... it is evident ... that the area over which protection could be effective in saving lives is roughly eight to ten times as great as that in which the chances of survival are small.'

Lord Mayhew, House of Lords debate on Civil Defence (General Local Authority Functions) Regulations, Hansard, vol. 444, cc. 523-49, 1 November 1983: '... if there had been effective civil defence at Hiroshima probably thousands of lives would have been saved and much human suffering would have been avoided. There is no question about it. ...'

Since the 1977 update by Glasstone and Dolan, extensive new updates to EM-1 for a further revised edition of *The Effects of Nuclear Weapons* have not actually been published with unlimited public distribution, due to President Carter's 1979 executive order which transferred responsibility for civil defense from the jurisdiction of the U.S. Department of Defense's Defense Civil Preparedness Agency to the new agency (which is not an Agency of the U.S. Department of Defense, and is not concerned with the analysis of nuclear weapons test effects data), the Federal Emergency Management Agency. However, the February 1997 U.S. Department of Defense's Defense Special Weapons Agency 0602715H RDT&E Budget Item Justification Sheet (R-2 Exhibit) states that a revision of Glasstone and Dolan's unclassified *Effects of Nuclear Weapons* was budgeted for 1997-9:

"FY 1997 Plans: ... Provide text to update Glasstone's book, *The Effects of Nuclear Weapons*, the standard reference for nuclear weapons effects. ... Update the unclassified textbook entitled, *The Effects of Nuclear Weapons*. ... Continue revision of Glasstone's book, *The Effects of Nuclear Weapons*, the standard reference for nuclear weapons effects. ... FY1999 Plans ... Disseminate updated *The Effects of Nuclear Weapons*."

The new publications are either classified or unclassified with limited distribution restrictions (e.g., Bridgman's *Introduction to the Physics of Nuclear Weapons Effects*, which includes several chapters on nuclear weapons design to enable initial radiation outputs to be calculated precisely) which prevents up-to-date basic nuclear effects information to justify civil defense against the latest nuclear threats from being widely disseminated; the books are printed for use only by government agencies. The problem with this approach is that widespread public understanding of the best information for civil defense countermeasures is prevented.



'The evidence from Hiroshima indicates that blast survivors, both injured and uninjured, in buildings later consumed by fire [caused by the blast

overturning charcoal braziers used for breakfast in inflammable wooden houses filled with easily ignitable bamboo furnishings and paper screens] were generally able to move to safe areas following the explosion. Of 130 major buildings studied by the U.S. Strategic Bombing Survey ... 107 were ultimately burned out ... Of those suffering fire, about 20 percent were burning after the first half hour. The remainder were consumed by fire spread, some as late as 15 hours after the blast. This situation is not unlike the one our computer-based fire spread model described for Detroit.’

- Defense Civil Preparedness Agency, U.S. Department of Defense, *DCPA Attack Environment Manual, Chapter 3: What the Planner Needs to Know About Fire Ignition and Spread*, report CPG 2-1A3, June 1973, Panel 27.

The Effects of the Atomic Bomb on Hiroshima, Japan, US Strategic Bombing Survey, Pacific Theatre, report 92, volume 2 (May 1947, secret):

Volume one, page 14:

“... the city lacked buildings with fire-protective features such as automatic fire doors and automatic sprinkler systems”, and pages 26-28 state the heat flash in Hiroshima was only:

“... capable of starting primary fires in exposed, easily combustible materials such as dark cloth, thin paper, or dry rotted wood exposed to direct radiation at distances usually within 4,000 feet of the point of detonation (AZ).”

Volume two examines the firestorm and the ignition of clothing by the thermal radiation flash in Hiroshima:

Page 24:

“Scores of persons throughout all sections of the city were questioned concerning the ignition of clothing by the flash from the bomb. ... Ten school boys were located during the study who had been in school yards about 6,200 feet east and 7,000 feet west, respectively, from AZ [air zero]. These boys had flash burns on the portions of their faces which had been directly exposed to rays of the bomb. The boys’ stories were consistent to the effect that their clothing, apparently of cotton materials, ‘smoked,’ but did not burst into flame. ... a boy’s coat ... started to smoulder from heat rays at 3,800 feet from AZ.” [Contrast this to the obfuscation and vagueness in Glasstone, *The Effects of Nuclear Weapons!*]

Page 88:

“Ignition of the City. ... Only directly exposed surfaces were flash burned. Measured from GZ, flash burns on wood poles were observed at 13,000 feet, granite was roughened or spalled by heat at 1,300 feet, and vitreous tiles on roofs were blistered at 4,000 feet. ... six persons who had been in reinforced-concrete buildings within 3,200 feet of air zero stated that black cotton blackout curtains were ignited by radiant heat ... dark clothing was scorched and, in some cases, reported to have burst into flame from flash heat [*although as the 1946 unclassified USSBS report admits, most immediately beat the flames out with their hands without sustaining injury, because the clothing was not drenched in gasoline, unlike peacetime gasoline tanker road accident victims*]

“... but a large proportion of over 1,000 persons questioned was in agreement that a great majority of the original fires was started by debris falling on kitchen charcoal fires, by industrial process fires, or by electric short circuits. Hundreds of fires were reported to have started in the centre of the city within 10 minutes after the explosion. Of the total number of buildings investigated [135 buildings are listed] 107 caught fire, and in 69 instances, the probable cause of initial ignition of the buildings or their contents was as follows: (1) 8 by direct radiated heat from the bomb (primary fire), (2) 8 by secondary sources, and (3) 53 by fire spread from exposed [wooden] buildings.”

‘It is true that the Soviets have tested nuclear weapons of a yield higher than that which we thought necessary, but the 100-megaton bomb of which they spoke two years ago does not and will not change the balance of strategic power. The United States has chosen, deliberately, to concentrate on more mobile and more efficient weapons, with lower but entirely sufficient yield ...’ - President John F. Kennedy in his television broadcast to the American public, 26 July 1963.

‘During World War II many large cities in England, Germany, and Japan were subjected to terrific attacks by high-explosive and incendiary bombs.

Yet, when proper steps had been taken for the protection of the civilian population and for the restoration of services after the bombing, there was little, if any, evidence of panic. It is the purpose of this book to state the facts concerning the atomic bomb, and to make an objective, scientific analysis of these facts. It is hoped that as a result, although it may not be feasible completely to allay fear, it will at least be possible to avoid panic.'

– **Dr George Gamow (the big bang cosmologist)**, Dr **Samuel Glasstone**, DSc (Executive Editor of the book), and **Professor Joseph O. Hirschfelder**, *The Effects of Atomic Weapons*, Chapter 1, p. 1, Paragraph 1.3, U.S. Department of Defense, September 1950.

'The consequences of a multiweapon nuclear attack would certainly be grave ... Nevertheless, recovery should be possible if plans exist and are carried out to restore social order and to mitigate the economic disruption.'

– **Philip J. Dolan**, editor of *Nuclear Weapons Employment* FM 101-31 (1963), *Capabilities of Nuclear Weapons* DNA-EM-1 (1972), and *The Effects of Nuclear Weapons* (1977), Stanford Research Institute, Appendix A of the **U.S. National Council on Radiological protection (NCRP) symposium *The Control of Exposure to the Public of Ionising Radiation in the Event of Accident or Attack*, 1981.**

'Suppose the bomb dropped on Hiroshima had been 1,000 times as powerful ... It could not have killed 1,000 times as many people, but at most the entire population of Hiroshima ... [regarding the hype about various nuclear "overkill" exaggerations] there is enough water in the oceans to drown everyone ten times.'

– **Professor Brian Martin, PhD (physics)**, 'The global health effects of nuclear war', *Current Affairs Bulletin*, Vol. 59, No. 7, December 1982, pp. 14-26.

In 1996, half a century after the nuclear detonations, data on cancers from the Hiroshima and Nagasaki survivors was published by D. A. Pierce et al. of the Radiation Effects Research Foundation, RERF (*Radiation Research* vol. 146 pp. 1-27; *Science* vol. 272, pp. 632-3) for 86,572 survivors, of whom 60% had received bomb doses of over 5 mSv (or 500 millirem in old units) suffering 4,741 cancers of which only 420 were due to radiation, consisting of 85 leukemias and 335 solid cancers.

'Today we have a population of 2,383 [radium dial painter] cases for whom we have reliable body content measurements. . . . All 64 bone sarcoma [cancer] cases occurred in the 264 cases with more than 10 Gy [1,000 rads], while no sarcomas appeared in the 2,119 radium cases with less than 10 Gy.'

– **Dr Robert Rowland, Director of the Center for Human Radiobiology**, *Bone Sarcoma in Humans Induced by Radium: A Threshold Response?*, *Proceedings of the 27th Annual Meeting, European Society for Radiation Biology, Radioprotection colloquies*, Vol. 32CI (1997), pp. 331-8.

Zbigniew Jaworowski, 'Radiation Risk and Ethics: Health Hazards, Prevention Costs, and Radiophobia', *Physics Today*, April 2000, pp. 89-90:

'... it is important to note that, given the effects of a few seconds of irradiation at Hiroshima and Nagasaki in 1945, a threshold near 200 mSv may be expected for leukemia and some solid tumors. [Sources: UNSCEAR, *Sources and Effects of Ionizing Radiation*, New York, 1994; W. F. Heidenreich, et al., *Radiat. Environ. Biophys.*, vol. 36 (1999), p. 205; and B. L. Cohen, *Radiat. Res.*, vol. 149 (1998), p. 525.] For a protracted lifetime natural exposure, a threshold may be set at a level of several thousand millisieverts for malignancies, of 10 grays for radium-226 in bones, and probably about 1.5-2.0 Gy for lung cancer after x-ray and gamma irradiation. [Sources: G. Jaikrishan, et al., *Radiation Research*, vol. 152 (1999), p. S149 (for natural exposure); R. D. Evans, *Health Physics*, vol. 27 (1974), p. 497 (for radium-226); H. H. Rossi and M. Zaider, *Radiat. Environ. Biophys.*, vol. 36 (1997), p. 85 (for radiogenic lung cancer).] The hormetic effects, such as a decreased cancer incidence at low doses and increased longevity, may be used as a guide for estimating practical thresholds and for setting standards. ...

'Though about a hundred of the million daily spontaneous DNA damages per cell remain unrepaired or misrepaired, apoptosis, differentiation, necrosis, cell cycle regulation, intercellular interactions, and the immune system remove about 99% of the altered cells. [Source: R. D. Stewart, *Radiation Research*, vol. 152 (1999), p. 101.] ...

'[Due to the Chernobyl nuclear accident in 1986] as of 1998 (according to UNSCEAR), a total of 1,791 thyroid cancers in children had been registered. About 93% of the youngsters have a prospect of full recovery. [Source: C. R. Moir and R. L. Telander, *Seminars in Pediatric Surgery*,

vol. 3 (1994), p. 182.] ... The highest average thyroid doses in children (177 mGy) were accumulated in the Gomel region of Belarus. The highest incidence of thyroid cancer (17.9 cases per 100,000 children) occurred there in 1995, which means that the rate had increased by a factor of about 25 since 1987.

‘This rate increase was probably a result of improved screening [not radiation!]. Even then, the incidence rate for occult thyroid cancers was still a thousand times lower than it was for occult thyroid cancers in nonexposed populations (in the US, for example, the rate is 13,000 per 100,000 persons, and in Finland it is 35,600 per 100,000 persons). Thus, given the prospect of improved diagnostics, there is an enormous potential for detecting yet more [fictitious] "excess" thyroid cancers. In a study in the US that was performed during the period of active screening in 1974-79, it was determined that the incidence rate of malignant and other thyroid nodules was greater by 21-fold than it had been in the pre-1974 period. [Source: Z. Jaworowski, *21st Century Science and Technology*, vol. 11 (1998), issue 1, p. 14.]’

‘Professor **Edward Lewis** used data from four independent populations exposed to radiation to demonstrate that the incidence of leukemia was linearly related to the accumulated dose of radiation. ... Outspoken scientists, including Linus Pauling, used **Lewis**’s risk estimate to inform the public about the danger of nuclear fallout by estimating the number of leukemia deaths that would be caused by the test detonations. In May of 1957 **Lewis**’s analysis of the radiation-induced human leukemia data was published as a lead article in *Science* magazine. In June he presented it before the Joint Committee on Atomic Energy of the US Congress.’ – Abstract of thesis by Jennifer Caron, *Edward Lewis and Radioactive Fallout: the Impact of Caltech Biologists Over Nuclear Weapons Testing in the 1950s and 60s*, Caltech, January 2003.

Dr John F. Loutit of the Medical Research Council, Harwell, England, in 1962 wrote a book called *Irradiation of Mice and Men* (University of Chicago Press, Chicago and London), discrediting the pseudo-science from geneticist **Edward Lewis** on pages 61, and 78-79:

‘... Mole [R. H. Mole, *Brit. J. Radiol.*, v32, p497, 1959] gave different groups of mice an integrated total of 1,000 r of X-rays over a period of 4 weeks. But the dose-rate - and therefore the radiation-free time between fractions - was varied from 81 r/hour intermittently to 1.3 r/hour continuously. The incidence of leukemia varied from 40 per cent (within 15 months of the start of irradiation) in the first group to 5 per cent in the last compared with 2 per cent incidence in irradiated controls. ...

‘What **Lewis** did, and which I have not copied, was to include in his table another group - spontaneous incidence of leukemia (Brooklyn, N.Y.) - who are taken to have received only natural background radiation throughout life at the very low dose-rate of 0.1-0.2 rad per year: the best estimate is listed as 2×10^{-6} like the others in the table. But the value of 2×10^{-6} was not calculated from the data as for the other groups; it was merely adopted. By its adoption and multiplication with the average age in years of Brooklynners - 33.7 years and radiation dose per year of 0.1-0.2 rad - a mortality rate of 7 to 13 cases per million per year due to background radiation was deduced, or some 10-20 per cent of the observed rate of 65 cases per million per year. ...

‘All these points are very much against the basic hypothesis of **Lewis** of a linear relation of dose to leukemic effect irrespective of time. Unhappily it is not possible to claim for **Lewis**’s work as others have done, “It is now possible to calculate - within narrow limits - how many deaths from leukemia will result in any population from an increase in fall-out or other source of radiation” [Leading article in *Science*, vol. 125, p. 963, 1957]. This is just wishful journalese.

‘The burning questions to me are not what are the numbers of leukemia to be expected from atom bombs or radiotherapy, but what is to be expected from natural background Furthermore, to obtain estimates of these, I believe it is wrong to go to [1950s inaccurate, dose rate effect ignoring, data from] atom bombs, where the radiations are qualitatively different [i.e., including effects from neutrons] and, more important, the dose-rate outstandingly different.’

Samuel Glasstone and Philip J. Dolan, *The Effects of Nuclear Weapons*, 3rd ed., 1977, pp. 611-3:

‘From the earlier studies of radiation-induced mutations, made with fruitflies [by Nobel Laureate Hermann J. Muller and other geneticists who worked on plants, who falsely hyped their insect and plant data as valid for mammals like humans during the June 1957 U.S. Congressional Hearings on fallout effects], it appeared that the number (or frequency) of mutations in a given population ... is proportional to the total dose ... More recent experiments with mice, however, have shown that these conclusions need to be revised, at least for mammals. [*Mammals are biologically closer to humans, in respect to DNA repair mechanisms, than short-lived insects whose life cycles are too small to have forced the evolutionary development of advanced DNA repair mechanisms, unlike mammals that need to survive for decades before reproducing.*] When exposed to X-rays or

gamma rays, the mutation frequency in these animals has been found to be dependent on the exposure (or dose) rate ...

‘At an exposure rate of 0.009 roentgen per minute [0.54 R/hour], the total mutation frequency in female mice is indistinguishable from the spontaneous frequency. [Emphasis added.] There thus seems to be an exposure-rate threshold below which radiation-induced mutations are absent ... with adult female mice ... a delay of at least seven weeks between exposure to a substantial dose of radiation, either neutrons or gamma rays, and conception causes the mutation frequency in the offspring to drop almost to zero. ... **recovery** in the female members of the population would bring about a substantial reduction in the ‘load’ of mutations in subsequent generations.’

George Bernard Shaw cynically explains groupthink brainwashing bias:

‘We cannot help it because we are so constituted that we always believe finally what we wish to believe. The moment we want to believe something, we suddenly see all the arguments for it and become blind to the arguments against it. The moment we want to disbelieve anything we have previously believed, we suddenly discover not only that there is a mass of evidence against, but that this evidence was staring us in the face all the time.’

From the essay titled ‘What is Science?’ by Professor Richard P. Feynman, presented at the fifteenth annual meeting of the National Science Teachers Association, 1966 in New York City, and published in *The Physics Teacher*, vol. 7, issue 6, 1968, pp. 313-20:

‘... great religions are dissipated by following form without remembering the direct content of the teaching of the great leaders. In the same way, it is possible to follow form and call it science, but that is pseudo-science. In this way, we all suffer from the kind of tyranny we have today in the many institutions that have come under the influence of pseudoscientific advisers.

‘We have many studies in teaching, for example, in which people make observations, make lists, do statistics, and so on, but these do not thereby become established science, established knowledge. They are merely an imitative form of science analogous to the South Sea Islanders’ airfields - radio towers, etc., made out of wood. The islanders expect a great airplane to arrive. They even build wooden airplanes of the same shape as they see in the foreigners’ airfields around them, but strangely enough, their wood planes do not fly. The result of this pseudoscientific imitation is to produce experts, which many of you are. ... you teachers, who are really teaching children at the bottom of the heap, can maybe doubt the experts. As a matter of fact, I can also define science another way: Science is the belief in the ignorance of experts.’

Richard P. Feynman, ‘This Unscientific Age’, in *The Meaning of It All*, Penguin Books, London, 1998, pages 106-9:

‘Now, I say if a man is absolutely honest and wants to protect the populace from the effects of radioactivity, which is what our scientific friends often say they are trying to do, then he should work on the biggest number, not on the smallest number, and he should try to point out that the [natural cosmic] radioactivity which is absorbed by living in the city of Denver is so much more serious [than the smaller doses from nuclear explosions] ... that all the people of Denver ought to move to lower altitudes.’

Feynman is *not* making a point about low level radiation effects, but about the politics of ignoring the massive natural background radiation dose, while provoking hysteria over much smaller measured fallout pollution radiation doses. Why is the anti-nuclear lobby so concerned about banning nuclear energy - which is not possible even in principle since most of our nuclear radiation is from the sun and from supernova debris contaminating the Earth from the explosion that created the solar system circa 4,540 million years ago - when they could cause much bigger radiation dose reductions to the population by concentrating on the bigger radiation source, natural background radiation. It is possible to shield natural background radiation by the air, e.g. by moving the population of high altitude cities to lower altitudes where there is more air between the people and outer space, or banning the use of high-altitude jet aircraft. The anti-nuclear lobby, as Feynman stated back in the 1960s, didn’t crusade to reduce the bigger dose from background radiation. Instead they chose to argue against the *much smaller* doses from fallout pollution. Feynman’s argument is still today falsely interpreted as a political statement, when it is actually exposing pseudo-science and countering political propaganda. It is still ignored by the media. It has been pointed out by Senator Hickenlooper on page 1060 of the May-June 1957 U.S. Congressional Hearings before the Special Subcommittee on Radiation of the Joint Committee on Atomic Energy, *The Nature of Radioactive Fallout and Its Effects on Man*:

‘I presume all of us would earnestly hope that we never had to test atomic weapons ... but by the same token I presume that we want to save thousands of lives in this country every year and we could just abolish the manufacture of [road accident causing] automobiles ...’

Dihydrogen monoxide is a potentially very dangerous chemical containing hydrogen and oxygen which has caused numerous severe burns by scalding

and deaths by drowning, contributes to the greenhouse effect, accelerates corrosion and rusting of many metals, and contributes to the erosion of our natural landscape: 'Dihydrogen monoxide (DHMO) is colorless, odorless, tasteless, and kills uncounted thousands of people every year. Most of these deaths are caused by accidental inhalation of DHMO, but the dangers of dihydrogen monoxide do not end there. Prolonged exposure to its solid form causes severe tissue damage. Symptoms of DHMO ingestion can include excessive sweating and urination, and possibly a bloated feeling, nausea, vomiting and body electrolyte imbalance. For those who have become dependent, DHMO withdrawal means certain death.'

From the site for the petition against dihydrogen monoxide: **'Please sign this petition and help stop This Invisible Killer. Get the government to do something now. ... Contamination Is Reaching Epidemic Proportions! Quantities of dihydrogen monoxide have been found in almost every stream, lake, and reservoir in America today. But the pollution is global, and the contaminant has even been found in Antarctic ice. DHMO has caused millions of dollars of property damage in the Midwest, and recently California.'**

A recent example of the pseudoscientific radiation 'education' masquerading as science that Feynman (quoted above) objected to in the 1960s was published in 2009 in an article called 'The proportion of childhood leukaemia incidence in Great Britain that may be caused by natural background ionizing radiation' in *Leukemia*, vol. 23 (2009), pp. 770–776, which falsely asserts - in contradiction to the evidence that the no-threshold model is *contrary* to Hiroshima and Nagasaki data: 'Risk models based primarily on studies of the Japanese atomic bomb survivors imply that low-level exposure to ionizing radiation, including ubiquitous natural background radiation, also raises the risk of childhood leukaemia. Using two sets of recently published leukaemia risk models and estimates of natural background radiation red-bone-marrow doses received by children, about 20% of the cases of childhood leukaemia in Great Britain are predicted to be attributable to this source.' The authors of this pseudoscience which is the opposite of the facts are R. Wakeford (Dalton Nuclear Institute, University of Manchester, Manchester, UK), G. M. Kendall (Childhood Cancer Research Group, Oxford, UK), and M. P. Little (Department of Epidemiology and Public Health, Imperial College, London, UK). It is disgusting and sinful that the facts about childhood leukemia are being lied on so blatantly for non-scientific purposes, and it is to be hoped that these leukemia investigators will either correct their errors or alternatively be banned from using scientific literature to promote false dogma for deception until they mend the error of their ways and repent their sins in this matter.

Protein P53, discovered only in 1979, is encoded by gene TP53, which occurs on human chromosome 17. P53 also occurs in other mammals including mice, rats and dogs. P53 is one of the proteins which continually repairs breaks in DNA, which easily breaks at body temperature: the DNA in each cell of the human body suffers at least two single strand breaks every second, and one double strand (i.e. complete double helix) DNA break occurs at least once every 2 hours (5% of radiation-induced DNA breaks are double strand breaks, while 0.007% of spontaneous DNA breaks at body temperature are double strand breaks)! Cancer occurs when several breaks in DNA happen to occur by chance at nearly the same time, giving several loose strand ends at once, which repair proteins like P53 then repair incorrectly, causing a mutation which can be proliferated somatically. This cannot occur when only one break occurs, because only two loose ends are produced, and P53 will reattach them correctly. But if low-LET ionising radiation levels are increased to a certain extent, causing more single strand breaks, P53 works faster and is able deal with faster breaks as they occur, so that multiple broken strand ends do not arise. This prevents DNA strands being repaired incorrectly, and prevents cancer - a result of mutation caused by faults in DNA - from arising. Too much radiation of course overloads the P53 repair mechanism, and then it cannot repair breaks as they occur, so multiple breaks begin to appear and loose ends of DNA are wrongly connected by P53, causing an increased cancer risk.

1. DNA-damaging free radicals are equivalent to a source of sparks which is always present naturally.
2. Cancer is equivalent the fire you get if the sparks are allowed to ignite the gasoline, i.e. if the free radicals are allowed to damage DNA without the damage being repaired.
3. Protein P53 is equivalent to a fire suppression system which is constantly damping out the sparks, or repairing the damaged DNA so that cancer doesn't occur.

In this way of thinking, the 'cause' of cancer will be down to a failure of a DNA repairing enzyme like protein P53 to repair the damage.

Dr Jane Orient, 'Homeland Security for Physicians', *Journal of American Physicians and Surgeons*, vol. 11, number 3, Fall 2006, pp. 75-9:

'In the 1960s, a group of activist physicians called Physicians for Social Responsibility (PSR) undertook to "educate the medical profession and the

world about the dangers of nuclear weapons," beginning with a series of articles in the *New England Journal of Medicine*. [Note that journal was publishing information for anti-civil defense propaganda back in 1949, e.g. the article in volume 241, pp. 647-53 of *New England Journal of Medicine* which falsely suggests that civil defense in nuclear war would be hopeless because a single burned patient in 1947 with 40% body area burns required 42 oxygen tanks, 36 pints of plasma, 40 pints of whole blood, 104 pints of fluids, 4,300 m of gauze, 3 nurses and 2 doctors. First, only unclothed persons in direct line of sight without shadowing can get 40% body area burns from thermal radiation, second, duck and cover offers protection in a nuclear attack warning, and G. V. LeRoy had already published, two years earlier, in *J.A.M.A.*, volume 134, 1947, pp. 1143-8, that less than 5% of burns in Hiroshima and Nagasaki were caused by building and debris fires. In medicine it is always possible to expend vast resources on patients who are fatally injured. In a mass casualty situation, doctors should not give up just because they don't have unlimited resources; as at Hiroshima and Nagasaki, they would need to do their best with what they have.] On its website, www.psr.org, the group boasts that it "led the campaign to end atmospheric nuclear testing." With this campaign, the linear no-threshold (LNT) theory of radiation carcinogenesis became entrenched. It enabled activists to calculate enormous numbers of potential casualties by taking a tiny risk and multiplying it by the population of the earth. As an enduring consequence, the perceived risks of radiation are far out of proportion to actual risks, causing tremendous damage to the American nuclear industry. ... Efforts to save lives were not only futile, but unethical: Any suggestion that nuclear war could be survivable increased its likelihood and was thus tantamount to warmongering, PSR spokesmen warned. ...

'For the mindset that engendered and enables this situation, which jeopardizes the existence of the United States as a nation as well as the lives of millions of its citizens, some American physicians and certain prestigious medical organizations bear a heavy responsibility.

'Ethical physicians should stand ready to help patients to the best of their ability, and not advocate sacrificing them in the name of a political agenda. **Even very basic knowledge, especially combined with simple, inexpensive advance preparations, could save countless lives.'**

Dr Theodore B. Taylor, *Proceedings of the Second Interdisciplinary Conference on Selected Effects of a General War*, DASIAC Special Report 95, July 1969, vol. 2, DASA-2019-2, AD0696959, page 298 (also [linked here](#)):

'I must just say that as far as I'm concerned I have had some doubts about whether we should have had a civil defense program in the past. I have no doubt whatsoever now, for this reason, that I've seen **ways in which the deterrent forces can fail to hold things off, so that no matter what our national leaders do, criminal organizations, what have you, groups of people over which we have no control whatsoever, can threaten other groups of people.'**

This point of Taylor is the key fact on the morality. Suppose we disarm and abandon nuclear power. That won't stop fallout from a war, terrorists, or a foreign reactor blast from coming. Civil defence knowledge is needed. Even when America has ABM, it will be vulnerable to wind carried fallout. No quantity of pacifist hot air will protect people against radiation.

Charles J. Hitch and Roland B. McKean of the RAND Corporation in their 1960 book *The Economics of Defense in the Nuclear Age*, Harvard University Press, Massachusetts, pp. 310-57:

'With each side possessing only a small striking force, a small amount of cheating would give one side dominance over the other, and the incentive to cheat and prepare a preventative attack would be strong ... With each side possessing, say, several thousand missiles, a vast amount of cheating would be necessary to give one side the ability to wipe out the other's striking capability. ... the more extensive a disarmament agreement is, the smaller the force that a violator would have to hide in order to achieve complete domination. Most obviously, "the abolition of the weapons necessary in a general or 'unlimited' war" would offer the most insuperable obstacles to an inspection plan, since the violator could gain an overwhelming advantage from the concealment of even a few weapons.'

Disarmament after World War I caused the following problem which led to World War II (reported by Winston S. Churchill in the London Daily Express newspaper of November 1, 1934):

'Germany is arming secretly, illegally and rapidly. A reign of terror exists in Germany to keep secret the feverish and terrible preparations they are making.'

British Prime Minister Thatcher's address to the United Nations General Assembly on disarmament on 23 June 1982, where she pointed out that in

the years since the nuclear attacks on Hiroshima and Nagasaki, 10 million people had been killed by 140 non-nuclear conflicts:

'The fundamental risk to peace is not the existence of weapons of particular types. It is the disposition on the part of some states to impose change on others by resorting to force against other nations ... Aggressors do not start wars because an adversary has built up his own strength. They start wars because they believe they can gain more by going to war than by remaining at peace.'

J. D. Culshaw, the then Director of the U.K. Home Office Scientific Advisory Branch, stated in his article in the Scientific Advisory Branch journal *Fission Fragments*, September 1972 (issue No. 19), classified 'Restricted':

'Apart from those who don't want to know or can't be bothered, there seem to be three major schools of thought about the nature of a possible Third World War ...

* 'The first group think of something like World War II but a little worse ...

* '... the second of World War II but very much worse ...

* 'and the third group think in terms of a catastrophe ...

'When the Armageddon concept is in favour, the suggestion that such problems exist leads to "way out" research on these phenomena, and it is sufficient to mention a new catastrophic threat [e.g., 10 years later this was done by Sagan with "nuclear winter" hype, which turned out to be fake because modern concrete cities can't produce firestorms like 1940s wooden-built areas of Hamburg, Dresden and Hiroshima] to stimulate research into the possibilities of it arising. The underlying appeal of this concept is that if one could show that the execution of all out nuclear, biological or chemical warfare would precipitate the end of the world, no one but a mad man would be prepared to initiate such a war. [However, as history proves, plenty of mad men end up gaining power and leading countries into wars.]'

J. K. S. Clayton, then Director of the U.K. Home Office Scientific Advisory Branch, stated in his introduction, entitled *The Challenge - Why Home Defence?*, to the 1977 Home Office Scientific Advisory Branch *Training Manual for Scientific Advisers*:

'Since 1945 we have had nine wars - in Korea, Malaysia and Vietnam, between China and India, China and Russia, India and Pakistan and between the Arabs and Israelis on three occasions. We have had confrontations between East and West over Berlin, Formosa and Cuba. There have been civil wars or rebellions in no less than eleven countries and invasions or threatened invasions of another five. Whilst it is not suggested that all these incidents could have resulted in major wars, they do indicate the aptitude of mankind to resort to a forceful solution of its problems, sometimes with success. ...'

It is estimated that Mongol invaders exterminated 35 million Chinese between 1311-40, without modern weapons. Communist Chinese killed 26.3 million dissenters between 1949 and May 1965, according to detailed data compiled by the Russians on 7 April 1969. The Soviet communist dictatorship killed 40 million dissenters, mainly owners of small farms, between 1917-59. Conventional (non-nuclear) air raids on Japan killed 600,000 during World War II. The single incendiary air raid on Tokyo on 10 March 1945 killed 140,000 people (more than the total for nuclear bombs on Hiroshima and Nagasaki combined) at much less than the \$2 billion expense of the Hiroshima and Nagasaki nuclear bombs! Non-nuclear air raids on Germany during World War II killed 593,000 civilians.

House of Lords debate *Nuclear Weapons: Destructive Power*, published in Hansard, 14 June 1988:

Lord Hailsham of Saint Marylebone: 'My Lords, if we are going into the question of lethality of weapons and seek thereby to isolate the nuclear as distinct from the so-called conventional range, is there not a danger that the public may think that Vimy, Passchendaele and Dresden were all right—sort of tea parties—and that nuclear war is something which in itself is unacceptable?'

Lord Trefgarne: 'My Lords, the policy of making Europe, or the rest of the world, safe for conventional war is not one that I support.'

House of Commons debate *Civil Defence* published in Hansard, 26 October 1983:

Mr. Bill Walker (Tayside, North): 'I remind the House that more people died at Stalingrad than at Hiroshima or Nagasaki. Yet people talk about fighting a conventional war in Europe as if it were acceptable. One rarely sees demonstrations by the so-called peace

movement against a conventional war in Europe, but it could be nothing but ghastly and horrendous. The casualties would certainly exceed those at Stalingrad, and that cannot be acceptable to anyone who wants peace'

On 29 October 1982, Thatcher stated of the Berlin Wall: 'In every decade since the war the Soviet leaders have been reminded that their pitiless ideology only survives because it is maintained by force. But the day comes when the anger and frustration of the people is so great that force cannot contain it. Then the edifice cracks: the mortar crumbles ... one day, liberty will dawn on the other side of the wall.'

On 22 November 1990, she said: 'Today, we have a Europe ... where the threat to our security from the overwhelming conventional forces of the Warsaw Pact has been removed; where the Berlin Wall has been torn down and the Cold War is at an end. These immense changes did not come about by chance. They have been achieved by strength and resolution in defence, and by a refusal ever to be intimidated.'

'The case for civil defence stands regardless of whether a nuclear deterrent is necessary or not. ... Even if the U.K. were not itself at war, we would be as powerless to prevent fallout from a nuclear explosion crossing the sea as was King Canute to stop the tide.' - U.K. Home Office leaflet, Civil Defence, 1982.

'... peace cannot be guaranteed absolutely. Nobody can be certain, no matter what policies this or any other Government were to adopt, that the United Kingdom would never again be attacked. Also we cannot tell what form such an attack might take. Current strategic thinking suggests that if war were to break out it would start with a period of conventional hostilities of uncertain duration which might or might not escalate to nuclear conflict. ... while nuclear weapons exist there must always be a chance, however small, that they will be used against us [like gas bombs in World War II]. ... as a consequence of war between other nations in which we were not involved fall out from nuclear explosions could fall on a neutral Britain. ... conventional war is not the soft option that is sometimes suggested. It is also too easily forgotten that in World War II some 50 million people died and that conventional weapons have gone on killing people ever since 1945 without respite.' - - **The Minister of State, Scottish Office (Lord Gray of Contin), House of Lords debate on Civil Defence (General Local Authority Functions) Regulations, Hansard, vol. 444, cc. 523-49, 1 November 1983.**

'All of us are living in the light and warmth of a huge hydrogen bomb, 860,000 miles across and 93 million miles away, which is in a state of continuous explosion.' - Dr Isaac Asimov.

'Dr Edward Teller remarked recently that the origin of the earth was somewhat like the explosion of the atomic bomb...' - Dr Harold C. Urey, *The Planets: Their Origin and Development*, Yale University Press, New Haven, 1952, p. ix.

'But compared with a supernova a hydrogen bomb is the merest trifle. For a supernova is equal in violence to about a million million million million hydrogen bombs all going off at the same time.' - Sir Fred Hoyle (1915-2001), *The Nature of the Universe*, Pelican Books, London, 1963, p. 75.

'In fact, physicists find plenty of interesting and novel physics in the environment of a nuclear explosion. Some of the physical phenomena are valuable objects of research, and promise to provide further understanding of nature.' - Dr Harold L. Brode, The RAND Corporation, 'Review of Nuclear Weapons Effects,' *Annual Review of Nuclear Science*, Volume 18, 1968, pp. 153-202.

'It seems that similarities do exist between the processes of formation of single particles from nuclear explosions and formation of the solar system from the debris of a [4 x 10²⁸ megatons of TNT equivalent, type Ia] supernova explosion. We may be able to learn much more about the origin of the earth, by further investigating the process of radioactive fallout from the nuclear weapons tests.' - **Dr Paul K. Kuroda (1917-2001)**, University of Arkansas, 'Radioactive Fallout in Astronomical Settings: Plutonium-244 in the Early Environment of the Solar System,' pages 83-96 of ***Radionuclides in the Environment: A Symposium Sponsored By the Division of Nuclear Chemistry and Technology At the 155th Meeting of the American Chemical Society, San Francisco, California, April 1-3, 1968***, edited by Symposium Chairman Dr Edward C. Freiling (1922-2000) of the U.S. Naval Radiological Defense Laboratory, Advances in Chemistry Series No. 93, American Chemical Society, Washington, D.C., 1970.

Dr Paul K. Kuroda (1917-2001) in 1956 correctly predicted the existence of water-moderated natural nuclear reactors in flooded uranium ore seams, which were discovered in 1972 by French physicist Francis Perrin in three ore deposits at Oklo in Gabon, where sixteen sites operated as natural nuclear reactors with self-sustaining nuclear fission 2,000 million years ago, each lasting several hundred thousand years, averaging 100 kW. The radioactive waste they generated remained in situ for a period of 2,000,000,000 years without escaping. They were discovered during

investigations into why the U-235 content of the uranium in the ore was only 0.7171% instead of the normal 0.7202%. Some of the ore, in the middle of the natural reactors, had a U-235 isotopic abundance of just 0.440%. Kuroda's brilliant paper is entitled, 'On the Nuclear Physical Stability of the Uranium Minerals', published in the *Journal of Chemical Physics*, vol. 25 (1956), pp. 781–782 and 1295–1296.

A type Ia supernova explosion, always yielding 4×10^{28} megatons of TNT equivalent, results from the critical mass effect of the collapse of a white dwarf as soon as its mass exceeds 1.4 solar masses due to matter falling in from a companion star. The degenerate electron gas in the white dwarf is then no longer able to support the pressure from the weight of gas, which collapses, thereby releasing enough gravitational potential energy as heat and pressure to cause the fusion of carbon and oxygen into heavy elements, creating massive amounts of radioactive nuclides, particularly intensely radioactive nickel-56, but half of all other nuclides (including uranium and heavier) are also produced by the **'R' (rapid) process of successive neutron captures by fusion products in supernovae explosions**. Type Ia supernovae occur typically every 400 years in the Milky Way galaxy. On 4 July 1054, Chinese astronomers observed in the sky (without optical instruments) the bright supernova in the constellation Taurus which today is still visible as the Crab Nebula through telescopes. The Crab Nebula debris has a diameter now of 7 light years and is still expanding at 800 miles/second. The supernova debris shock wave triggers star formation when it encounters hydrogen gas in space by compressing it and seeding it with debris; bright stars are observed in the Orion Halo, the 300 light year diameter remains of a supernova. It is estimated that when the solar system was forming 4,540 million years ago, a supernova occurred around 100 light years away, and the heavy radioactive debris shock wave expanded at 1,000 miles/second. Most of the heavy elements including iron, silicon and calcium in the Earth and people are the stable end products of originally radioactive decay chains from the space burst fallout of a 7×10^{26} megatons thermonuclear explosion, created by fusion and successive neutron captures after the implosion of a white dwarf; a supernova explosion.

How would a 10^{55} megaton hydrogen bomb explosion differ from the **big bang**? Ignorant answers biased in favour of curved spacetime (ignoring quantum gravity!) abound, such as claims that explosions can't take place in 'outer space' (disagreeing with the facts from nuclear space bursts by Russia and America in 1962, not to mention natural supernova explosions in space!) and that explosions produce sound waves in air by definition! There are indeed major differences in the nuclear reactions between the big bang and a nuclear bomb. But it is helpful to notice the solid physical fact that implosion systems suggest the mechanism of gravitation: in implosion, TNT is well-known to produce an *inward* force on a bomb core, but Newton's 3rd law says there is an equal and opposite reaction force *outward*. In fact, you can't have a radially outward force without an inward reaction force! It's the rocket principle. The rocket accelerates (with force $F = ma$) *forward* by virtue of the recoil from accelerating the exhaust gas (with force $F = -ma$) in the *opposite* direction! Nothing massive accelerates without an equal and opposite reaction force. Applying this *fact* to the **measured $6 \times 10^{-10} \text{ ms}^{-2} \sim Hc$ cosmological acceleration of matter radially outward** from observers in the universe which **was predicted accurately in 1996** and later observationally discovered in 1999 (by Perlmutter, et al.), we find an outward force $F = ma$ and inward reaction force by the 3rd law. **The inward force allows quantitative predictions, and is mediated by gravitons, predicting gravitation in a checkable way (unlike string theory, which is just a landscape of 10^{500} different perturbative theories and so can't make any falsifiable predictions about gravity)**. So it seems as if nuclear explosions do indeed provide helpful analogies to natural features of the world, and the mainstream lambda-CDM model of cosmology - with its force-fitted unobserved *ad hoc* speculative 'dark energy' - ignores and sweeps under the rug major quantum gravity effects which increase the physical understanding of particle physics, particularly force unification and the relation of gravitation to the existing electroweak $SU(2) \times U(1)$ section of the Standard Model of fundamental forces.

Richard Lieu, Physics Department, University of Alabama, 'Lambda-CDM cosmology: how much suppression of credible evidence, and does the model really lead its competitors, using all evidence?', <http://arxiv.org/abs/0705.2462>.

Even Einstein grasped the possibility that general relativity's lambda-CDM model is at best just a classical approximation to quantum field theory, at the end of his life when he wrote to Besso in 1954:

'I consider it quite possible that physics cannot be based on the [classical differential equation] field principle, i.e., on continuous structures. In that case, nothing remains of my entire castle in the air, [non-quantum] gravitation theory included ...'

'Science is the organized skepticism in the reliability of expert opinion.' - Professor Richard P. Feynman (quoted by Professor Lee Smolin, *The Trouble with Physics*, Houghton-Mifflin, New York, 2006, p. 307).

'The expression of dissenting views may not seem like much of a threat to a powerful organization, yet sometimes it triggers an amazingly hostile

response. The reason is that a single dissenter can puncture an illusion of unanimity. ... Among those suppressed have been the engineers who tried to point out problems with the Challenger space shuttle that caused it to blow up. More fundamentally, suppression is a denial of the open dialogue and debate that are the foundation of a free society. Even worse than the silencing of dissidents is the chilling effect such practices have on others. For every individual who speaks out, numerous others decide to play it safe and keep quiet. More serious than external censorship is the problem of self-censorship.'

— Professor Brian Martin, University of Wollongong, 'Stamping Out Dissent', Newsweek, 26 April 1993, pp. 49-50

In 1896, Sir James Mackenzie-Davidson asked Wilhelm Röntgen, who discovered X-rays in 1895: 'What did you think?' Röntgen replied: 'I did not think, I investigated.' The reason? Cathode ray expert J. J. Thomson in 1894 saw glass fluorescence far from a tube, but due to prejudice (expert opinion) he avoided investigating that X-ray evidence! 'Science is the organized skepticism in the reliability of expert opinion.' - Richard Feynman, in Lee Smolin, *The Trouble with Physics*, Houghton-Mifflin, 2006, p. 307.

Mathematical symbols in this blog: your computer's browser needs access to standard character symbol sets to display Greek symbols for mathematical physics. If you don't have the symbol character sets installed, the density symbol ' ρ ' (*Rho*) will appear as 'r' and the ' π ' (*Pi*) symbol will as 'p', causing confusion with the use of 'r' for radius and 'p' for momentum in formulae. This problem exists with Mozilla Firefox 3, but not with Microsoft Explorer which displays Greek symbols.

About Me



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<http://nige.wordpress.com/> <http://quantumfieldtheory.org/> <http://www.math.columbia.edu/~woit/wordpress/?p=273#comment-5322>, <http://www.math.columbia.edu/~woit/wordpress/?p=353&page=1#comment-8728>, <http://www.math.columbia.edu/~woit/wordpress/?p=215#comment-4082>.

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From 1945-62, America tested 216 nuclear weapons in the atmosphere, totalling 154 megatons, with a mean yield of 713 kilotons

From 1949-62, Russia tested 214 nuclear weapons in the atmosphere, totalling 281 megatons, with a mean yield of 1.31 megatons

From 1952-8, Britain tested 21 nuclear weapons in the atmosphere, totalling 10.8 megatons, with a mean yield of 514 kilotons

From 1960-74, France tested 46 nuclear weapons in the atmosphere, totalling 11.4 megatons, with a mean yield of 248 kilotons

From 1964-80, China tested 23 nuclear weapons in the atmosphere, totalling 21.5 megatons, with a mean yield of 935 kilotons

In summary, from 1945-80, America, Russia, Britain, France and China tested 520 nuclear weapons in the atmosphere, totalling 478.7 megatons, with a mean yield of 921 kilotons

Mean yield of the 5,192 nuclear warheads and bombs in the deployed Russian nuclear stockpile as of January 2009: 0.317 Mt. Total yield: 1,646 Mt.

Mean yield of the 4,552 nuclear warheads and bombs in the deployed U.S. nuclear stockpile as of January 2007: 0.257 Mt. Total yield: 1,172 Mt.

For diffraction damage where damage areas scale as the two-thirds power of explosive yield, this stockpile's area damage potential can be compared to the 20,000,000 conventional bombs of 100 kg size (2 megatons of TNT equivalent total *energy*) dropped on Germany during World War II: (Total nuclear bomb blast diffraction damaged ground *area*)/(Total conventional blast diffraction damaged ground *area* to Germany during World War II) = $[4,552 \cdot (0.257 \text{ Mt})^{2/3}] / [20,000,000 \cdot (0.000001 \text{ Mt})^{2/3}] = 1,840/431 = 4.3$. Thus, although the entire U.S. stockpile has a TNT *energy* equivalent to 586 times that of the 2 megatons of conventional bombs dropped on Germany in World War II, it is only capable of causing 4.3 times as much diffraction type damage area, because *any given amount of explosive energy is far more efficient when distributed over many small explosions than in a single large explosion! Large explosions are inefficient because they cause unintended collateral damage, wasting energy off the target area and injuring or damaging unintended targets!*

In a controlled sample of 36,500 survivors, 89 people got leukemia over a 40 year period, above the number in the unexposed control group. (Data: *Radiation Research*, volume 146, 1996, pages 1-27.) Over 40 years, in 36,500 survivors monitored, there were 176 leukemia deaths which is 89 more than the control (unexposed) group got naturally. There were 4,687 other cancer deaths, but that was merely 339 above the number in the control (unexposed) group, so this is statistically a much smaller rise than the leukemia result. Natural leukemia rates, which are very low in any case, were increased by 51% in the irradiated survivors, but other cancers were merely increased by just 7%. Adding all the cancers together, the total was 4,863 cancers (virtually all natural cancer, nothing whatsoever to do with radiation), which is just 428 more than the unexposed control group. Hence, the total increase over the natural cancer rate due to bomb exposure was only 9%, spread over a period of 40 years. There was no increase whatsoever in genetic malformations.

There should be a note here about how unnatural radioactive pollution is (not) in space: the earth's atmosphere is a radiation shield equivalent to being protected behind a layer of water 10 metres thick. This reduces the cosmic background radiation by a factor of 100 of what it would be without the earth's atmosphere. Away from the largely uninhabited poles, the Earth's magnetic field also protects us against charged cosmic radiations, which are deflected and end up spiralling around the magnetic field at high altitude, in the Van Allen trapped radiation belts. On the Moon, for example, there is no atmosphere or significant magnetic field so the natural background radiation exposure rate at solar minimum is 1 milliRoentgen per hour (about 10 microSieverts/hour) some 100 times that on the Earth (0.010 milliRoentgen per hour or about 0.10 microSieverts/hour). The Apollo astronauts visiting the Moon wore dosimeters and they received an average of 275 milliRoentgens (about 2.75 milliSieverts) of radiation (well over a year's exposure to natural background at sea level) in over just 19.5 days. It is a lot more than that during a solar flare, which is one of the concerns for astronauts to avoid (micrometeorites are another concern in a soft spacesuit).

The higher up you are above sea level, the less of the atmosphere there is between you and space, so the less shielding you have to protect you from the intense cosmic space radiations (emitted by thermonuclear reactors we call 'stars', as well as distant supernovae explosions). At sea level, the air above you constitutes a radiation shield of 10 tons per square metre or the equivalent of having a 10 metres thick water shield between you and outer space. As you go up a mountain or up in an aircraft, the amount of atmosphere between you and space decreases, thus radiation levels increase with altitude because there is less shielding. The normal background radiation exposure rate shoots up by a factor of 20, from 0.010 to 0.20 milliRoentgens per hour, when any airplane ascends from sea level to 36,000 feet cruising altitude. (The now obsolete British Concorde supersonic transport used to maintain radiation-monitoring equipment so that it could drop to lower-altitude flight routes if excessive cosmic radiation due to solar storms were detected.) Flight aircrew get more radiation exposure than many nuclear industry workers at nuclear power plants. Residents of the high altitude city of Denver get 100 milliRoentgens (about 1 milliSievert) more annual exposure than a resident of Washington, D.C., but the mainstream anti-radiation cranks don't campaign for the city to be shut to save kids radiation exposure, for mountain climbing to be banned, etc.!

1994 revised Introduction to Kearny's Nuclear War Survival Skills, by Dr Edward Teller, January 14, 1994:

'If defense is neglected these weapons of attack become effective. They become available and desirable in the eyes of an imperialist dictator, even if his means are limited. Weapons of mass destruction could become equalizers between nations big and small, highly developed and primitive, if defense is neglected. If defense is developed and if it is made available for general prevention of war, weapons of aggression will become less desirable. Thus defense makes war itself less probable. ... One psychological defense mechanism against danger is to forget about it. This attitude is as common as it is disastrous. It may turn a limited danger into a fatal difficulty.'

Advice of Robert Watson-Watt (Chief Scientist on the World War II British Radar Project, defending Britain against enemy attacks): 'Give them the third best to go on with, the second best comes too late, the best never comes.'

From Wikipedia (a source of groupthink): 'Groupthink is a type of thought exhibited by group members who try to minimize conflict and reach consensus without critically testing, analyzing, and evaluating ideas. Individual creativity, uniqueness, and independent thinking are lost in the pursuit of group cohesiveness, as are the advantages of reasonable balance in choice and thought that might normally be obtained by making decisions as a group. During groupthink, members of the group avoid promoting viewpoints outside the comfort zone of consensus thinking. A variety of motives for this may exist such as a desire to avoid being seen as foolish, or a desire to avoid embarrassing or angering other members of the group. Groupthink may cause groups to make hasty, irrational decisions, where individual doubts are set aside, for fear of upsetting the group's balance.'

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- ◆ [1950 edition \(high quality 82.7 MB PDF file\) of U.S. Department of Defense book *The Effects of Atomic Weapons*](#)
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◆ THAAD Goes Another ABM Test

◆ Alex Wellerstein's *Restricted Data* blog contains some interesting news (but beware of his uncritical use of unobstructed dry desert and nude skin thermal radiation and other effects predictions from the 1977 edition of Glasstone and Dolan; he deletes critically objective comments and pretends that honest criticisms of propaganda as being ignorant deception are rude as an excuse for ignoring the facts and refusing to engage in objective discussion of controversial aspects of this topic; basically if you pay homage and engage in groupthink bias you may be tolerated).

◆ Carey Sublette's *Nuclear Weapon Archive* (it contains errors from Chuck Hansen's compilation, and it is concentrated on bomb building, not on civil defence countermeasure evaluations done at nuclear tests; note that Chuck Hansen's books and CDs give a false quotation from Neil O' Hines's book *Proving Ground* on the effects of the 1952 Mike explosion on nearby Engebi Island, where Hines later in the book states that the native rats in fact *survived the intense close-in blast, heat and fallout under a few unches of soil, despite the initial ignorant belief that they could not have survived!!!*)

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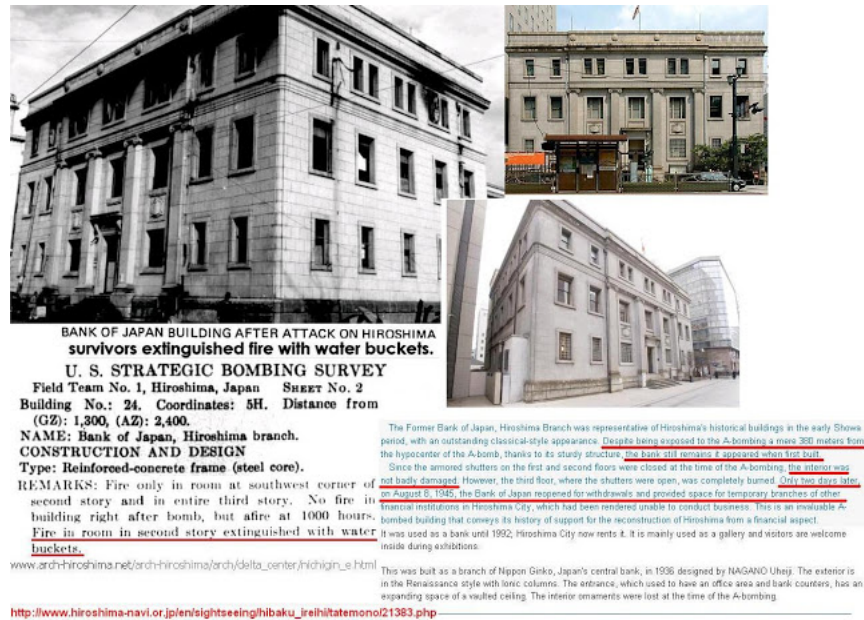
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The Bank of Japan, Hiroshima, survived 380 m from Ground Zero, within the firestorm area, when fires were extinguished by water buckets by its survivors, the majority of people in the building having survived. Secret US Strategic Bombing Survey report proves civil defense for modern concrete buildings is effective. The building was reopened as a bank on 8 August, merely two days after nuclear attack, and continued in use as a bank until 1992. It remains in Hiroshima. This beautifully designed and sturdy reinforced concrete building was designed in 1936 by Nagano Uheiji.